Special Computer Game Design Section

COMPUTER GAMING WORLD

The Premier Computer Game Magazine

July 1993 / Number108

5 Pages of X-Wing Tips

Sneak Preview: Id's *Doom*

Michael Jordan Takes Flight

Winning at *Caesar*

The Making of *7th Guest* An Inside Look

***Lemmings 2* Marches On!**

Legend's *Companions of Xanth*

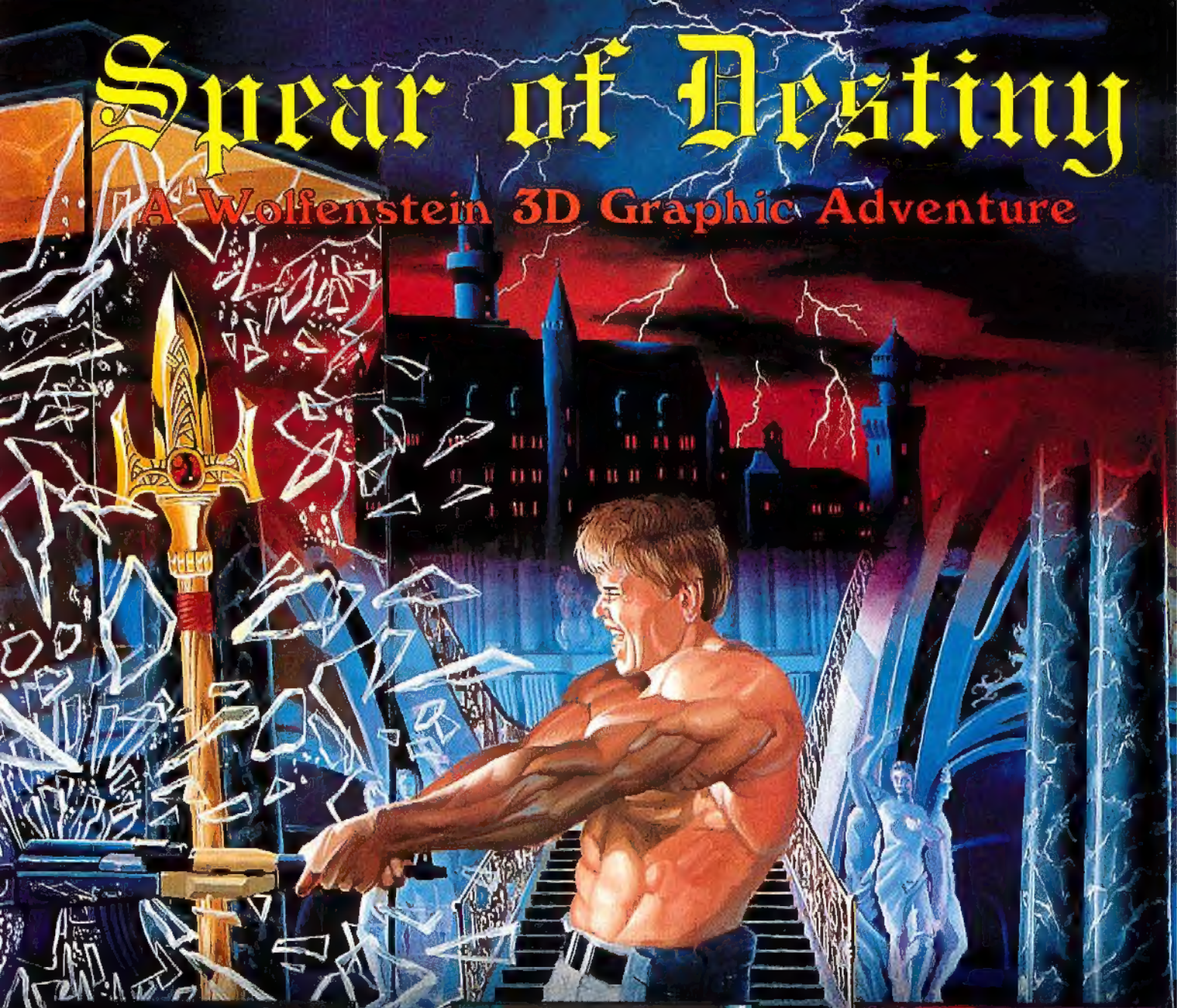
$3.95 USA $4.95 Canadian

07

0 29074 12158 9

Spear of Destiny

A Wolfenstein 3D Graphic Adventure



Virtual Reality!

Spear of Destiny brings virtual reality to the PC, hurling you into an intense battle between good and evil in which only *you* can save the world! A breathtaking musical soundtrack sets the mood, while amazing ``first person'' visual perspective and spectacular digital stereo sound effects give an experience like no other game you've ever played!

Features!

- spectacular VGA virtual reality system
- breathtaking musical soundtrack for Adlib, Sound Blaster
- digitized stereo sound effects for Sound Blaster, Sound Source
- over 20 complete floors to cover
- 4 levels of play difficulty
- special extra challenges for advanced game players
- saves multiple games in process

What the Reviewers Say!

- ``the player is `there' like no game I've ever played...''
- ``the sound and the visual action, is frighteningly realistic...''
- ``I can't remember a game making such effective use of perspective and sound and thereby evoking such intense physiological responses from its players.''

Game by id Software. Published by FormGen Corporation, Box 279, North Andover, MA, USA, 01845-0279 (800)263-2390 (416)857-4141 Fax: (416)857-4531

Circle Reader Service #56

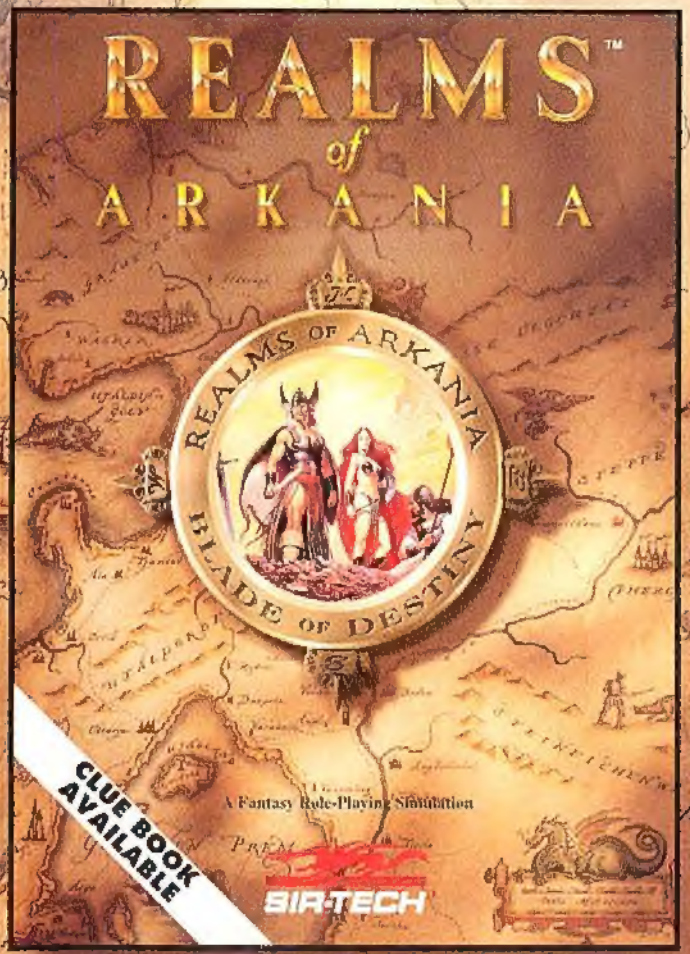
ENTER A WHOLE NEW REALM

Enter a whole new realm of fantasy role-playing...
Enter a rich and detailed gaming system...

One that offers all you expect, and more, from a finely woven, carefully crafted epic adventure. One that allows you to choose your level of involvement in the "behind the scenes" detail, ideal for both novice and experienced players. One that places you in the midst of an explosive era of strife and turbulence. One providing a true quest to challenge your imagination, a rich adventure to involve your mind, and careful balancing and smooth game play to make sure your time is spent playing.

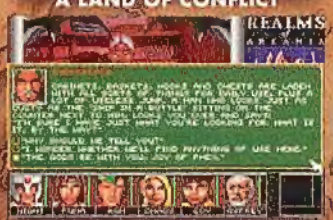
PRODUCT FEATURES

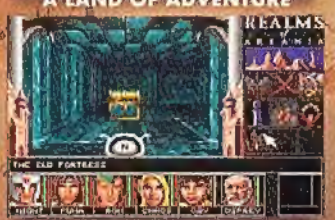
- Fully Animated, Isometric 3D Combat
- Phased-time Game System
- Town & Dungeon Automapping
- 2 Difficulty Levels for Novice & Experienced Players
- True Point & Click Interface
- Easy to Use Multiple Choice Dialogues
- Impressive Musical Score & Sound Effects
- Full 3D "First Person" View of Towns & Dungeons



A LAND OF CONFLICT

A LAND OF ADVENTURE


A LAND OF CONVERSATION


A LAND OF RICHES

AVAILABLE FOR:
IBM PC & 100% COMPATIBLES (VGA, 640K, 80286 OR BETTER, MS-DOS 3.X, 5.0 OR 6.0) SOUND SUPPORT FOR: AD-LIB, AD-LIB GOLD, SOUND BLASTER, SOUND BLASTER PRO, ROLAND LAPC-1/MT-32, PRO AUDIO SPECTRUM, THUNDERBOARD, PC & TANDY INTERNAL SPEAKER **AMIGA** (1MB REQUIRED)

AVAILABLE AT A SOFTWARE RETAILER NEAR YOU, OR CALL:

(800) 447-1230

Enter a world of mythical creatures, magic and old legends...
Enter a world filled with peril, conflict and uncertainty...
ENTER ARKANIA...

Cut loose in a world of blazing adventure. Hundreds of hours of game play, exploring a vast continent richly studded with towns, dungeons and endless adventuring opportunities! Your heroic characters must track down every lead and every contact if they are to succeed in their search for the renowned Grimring, the Blade of Destiny. You'll face many hazardous journeys by road and ship as you explore the fantastic realms and cities of Arkania. Of course, you will encounter numerous foes determined to prevent you from succeeding in your quest.

GAME FEATURES

- More than 70 Towns, Villages, Dungeons and Ruins
- 12 Character Archetypes
- 7 Positive & 7 Negative Character Attributes
- Over 50 Skills, adjustable at the player's option
- 12 Magical Realms with over 80 spells
- Auto-Combat Option
- Parties of up to 6 Characters may be Split and Regrouped

SIR-TECH

P.O. BOX 245, OGDENSBURG, NY 13669 FAX# (315) 393-1525

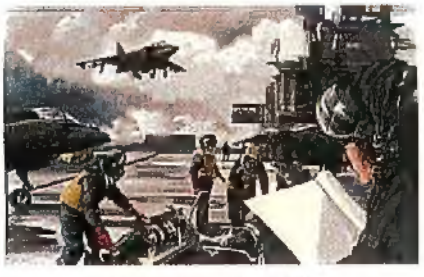
Circle Reader Service #91

COMPUTER GAMING WORLD

Companions of Xanth pg. 10

New Indy 500? pg. 62

Doom pg. 104



Jump Jet pg. 146

FEATURES

10 **Riding Nightmares and Shaking Palm Trees**
Pun and games in **Legend**'s *Companions of Xanth*
by Johnny L. Wilson

12 **To Air is Jordan**
To fly is *Michael Jordan in Flight*
by Wallace Poulter

18 **Feel The Force, Reader**
X-Wing marks the spot when Rusel DeMaria unveils tips from his exciting new book

SPECIAL COMPUTER GAME DESIGN SECTION

34 **Computer Game Developers Conference**
CGW's editorial staff invades the design community

44 ***Day of the Tentacle* Speaks**
Chris Lombardi gives voice to the details behind **LucasArts**' upcoming talkie

48 **Developers Think Like a Pendulum Do**
What computer game designers say to each other: Abstracts from *The Journal of Computer Game Design*

54 **What Happened to the Other Six Guests?**
Verin Lewis shares the secrets behind *The 7th Guest*

62 **Hot Cars and Hot Graphics**
CGW's Gordon Goble interviews **Papyrus**' Dave Kaemmer

68 **The "Write" Stuff**
Using **Maxis**' games as "authoring tools"
by science fiction author Martin Cirulis

74 **Book Review: *Flights of Fantasy***
Mike Weksler reviews a book on programming a flight sim


```
VERIFY(Crea
teMenu());
}

CColorMenu:
:~CColorMen
u()
{
 Detach();

ASSERT(m_hM
enu ==
NULL);
// defaul
CMenu::~CMe
nu will
destroy
}

void
CColorMenu:
:AppendColo
rMenuItem(U
INT nID,
COLORREF
color)
{

VERIFY(Appe
ndMenu(MF_E
NABLED |
MF_OWNERDRA
W, nID,
(LPCSTR)col
or));
}
```


76 **Back in Time**
Presto Studios' *The Journeyman Project*
by Tony Reveaux

82 **Luv Dose *Lemmings 2***
Psygnosis helps gamers discover new Tribes
by Saul Serrafina

86 **Conquering the *Maelstrom***
Merit Software's space strategy game
by Douglas Winship

88 **Tracking Down a Winner**
Ken Hill tries **MPGN**'s on-line *Empire Builder*

94 **Executive Decision**
D.C. True's *Shadow President*
by political columnist Chuck Moss

Creepers™

The Creepers are on the move. It's the annual trek to the Butterfly Bowls. But, with over 70 levels of factories, caverns, and forests to cross and with the worst sense of direction in the entire animal kingdom, getting them all there is going to take some doing!

Creepers Features:

- Over 70 puzzle levels.
- 256 colors (PC).
- Crazy Creeper animations.
- Difficulty rating from easy to brutal.
- Full soundcard support with 16 funky soundtracks.
- The Creeper-cam with multiple playfield views.

The mean green creeping machine

Look for Creepers crawling in your favorite software store, or call: (800) 438-7794

Psygnosis
29 Saint Mary's Court, Brookline, MA 02146
(617) 731-3553

Circle Reader Service #81

COMPUTER GAMING WORLD

Publisher
Russell Sipe

Editor
Johnny Wilson

On-Line Editor
Alan Emrich

Managing Editor
Ken Brown

Assistant Editor
Chris Lombardi

Art Director
Susan Zurawik

Graphic Artist
Jack Rodrigues

Marketing Manager
Diane Miller

M.I.S. Manager
Gene Allen

Assistant M.I.S. Manager
Mike Weksler

Ad Manager
Jim Messing

Circulation
Kathy Garcia

Contributing Editor
(Adventure Games)
Scorpia

Contributing Editor
(Wargames)
Evan Brooks

Ad Director
Jay Eisenberg

Computer Gaming World (ISSN 0744-6667) is published monthly by **Golden Empire Publications, Inc.** 130 Chaparral Ct. Suite 260, Anaheim Hills, CA 92808. Second-class Postage paid at Erlanger, KY 41011 and additional mailing offices. Permit #672-910.

Contents are copyrighted by Golden Empire Publications, 1993.

Postmaster: Send address changes to Computer Gaming World, P.O. Box 601, Mt. Morris, IL 61054-8052

The subscription rate for twelve issues (one year) is $28.00. Canadian and foreign surface subscriptions add $11.00. Foreign air subscriptions are $78.00 per year. All payments must be in U.S. dollars, made by check drawn upon a U.S. bank, Visa, MasterCard, or money order.

Psalms 9:1-2

CompuServe (76703,622)

America On-Line: CGW

Prodigy: EXPT40B

GEnie: CGW

Subscription Dept. 1 (800) 827-4450

Telephone: (714) 283-3000

Fax: (714) 283-3444

Foreign Subscribers: (815) 734-1113

For advertising information only, call:

JE Publishers' Representative Company

3415 S. Sepulveda Blvd., Suite 520

Los Angeles, CA 90034

(310) 572-7272

For newsstand circulation, call:

Kemco Publishers Services
(603) 924-0224

Printed in the U.S.A.

104 **Sneak Preview: *Doom***
What's hot about **Id Software**'s new game?
by Chris Lombardi

106 **The Newest Games in Europe**
Robin Matthews visits the European Computer Trade Show

112 **The Future of Computer Entertainment**
CGW's editorial staff gleans clues from InterMedia '93

118 **Neither Fish Nor Foul**
Gordon Goble examines the lure of **Maxis**' *El Fish*

120 **'Mech My Day**
Electronic Arts' *Ultrabots*
by Allen Greenberg

COMPUTER WARGAMING WORLD

126 **Start the Revolution with Koei**
Tim Carter evaluates *Liberty or Death*

130 **Win in Rome, Just as the Romans Do**
Strategy for **Impressions**' *Caesar*
by Alan Emrich

134 ***From Sumter to Appomattox***
Terry Lee Coleman fires the first shot in publicizing this American Civil War game from Canada

138 **The Perfect 20th Century General**
Richard Savage reviews the new data disk from **QQP**

140 **What's in a Boardgame?**
HPS Simulations' *Aide de Camp* creates PBEM kits
by Alan Emrich

143 **If It's Tuesday, This Must Be Russia**
A replay of *V for Victory: Velikiye Luki*
by Michael Peck

146 ***Jump Jet* from MicroProse**
European correspondent Paul Rigby takes an early look

155 **Which Games are the Games of the Year?**
Nominations for Computer Gaming World's "Games of the Year"

DEPARTMENTS

28 Rumor Bag (Spanishus Fleaus)
80 Scorpion's Tale (Of Woe and Anguish)
98 Scorpion's View (Serpent Isle)
108 Letters from Paradise
110 The Fifth Wave (Rich Tennant Cartoon)
116 Shareware (Family Games)
124 Computer Wargaming World Editorial
150 Taking A Peek
155 Advertiser Index
157 CGW Hall of Fame
158 The Top 100 Games
160 What's Hot
161 Patches
162 Editorial (Hollywood)

Ever Think You Were

SOMETHING ELSE?

SOMEONE ELSE?

SOMEWHERE ELSE?

Don't Worry...

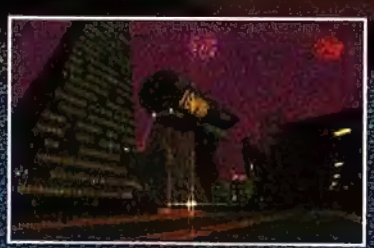
Circle Reader Service #49

IT'S ALL IN

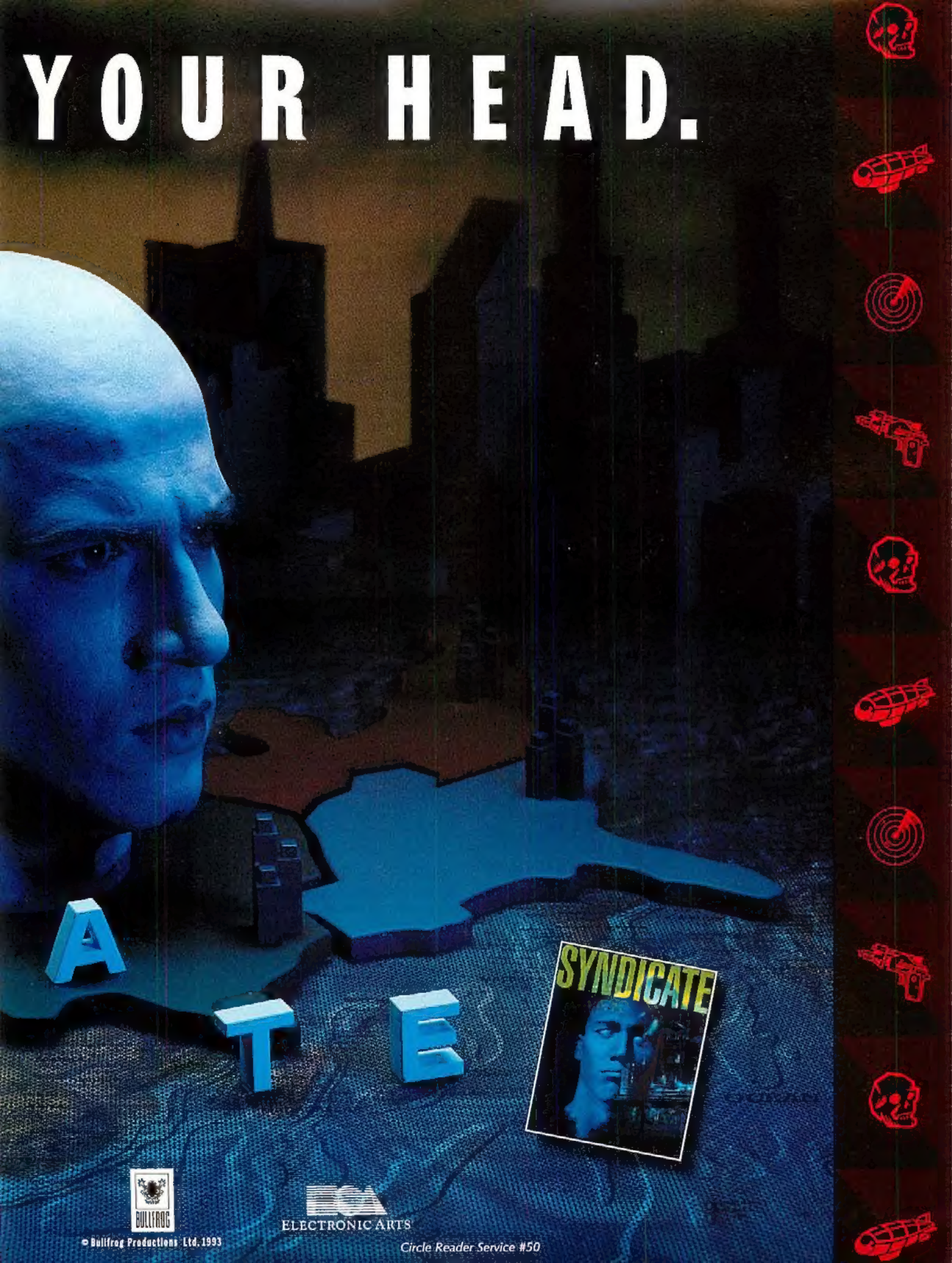
Sources indicate that a rival syndicate has developed a dangerous new computer program, and our research boys want it. Your mission: build Company Agents using cybernetic implants and hi-tech weaponry. Utilizing action, strategy or a lethal mix of the two, you can infiltrate fifty remarkably detailed futuristic cities, each 'alive' in real-time.

SYNDIC

To confiscate a copy of Syndicate, visit your local software retailer, or call toll free 1-800-245-4525. Available for the IBM PC and compatibles.

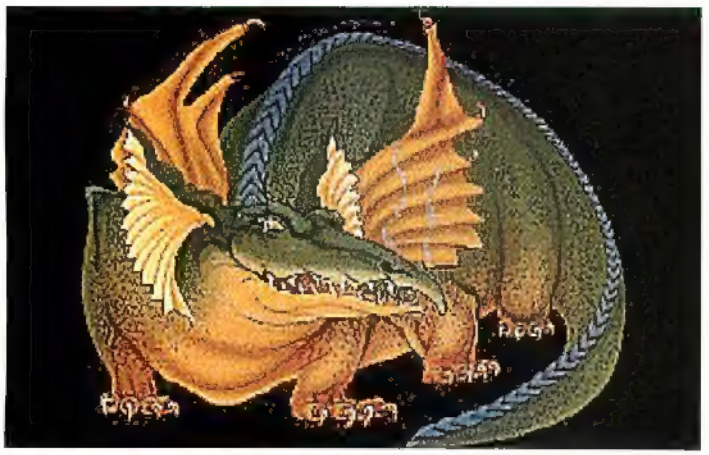


Eliminate the Hooligans. Take control of the city. But expect maximum resistance.


YOUR HEAD.
A T E
SYNDICATE
BULLFROG
ELECTRONIC ARTS
© Bullfrog Productions Ltd. 1993
Circle Reader Service #50

Sneak Previews are not designed to be reviews. They are feature articles based on "works in progress" that CGW's editors have deemed worthy of early coverage. These articles are not intended to provide the final word on a product, since we expect to publish appropriate review coverage when the game is finished.

Nada Chance Xanth Fans Would Miss This One



Legend Entertainment's *Companions of Xanth*

by Johnny L. Wilson

Grundy Golem: *So, you understand that each character has a personal name, a creature/race name: Jenny Elf, Che Centaur, Demoness Metria, and so on.*

Dug Mundane: *Okay, but who's the gorgeous blonde on the cover?*

Grundy: *She's Nada Naga.*

Dug: *I can see she's not a Naga. Otherwise she would have a long serpentine tail. But who is she?*

Grundy: *Nada Naga.*

Dug: *I know she's not a Naga ...*

Grundy: *Then what do you need to know?*

Dug: *Her name.*

Grundy: *Nada Naga.*

Dug: *I didn't ask her race. I asked her name.*

Grundy: *Nada Naga.*

Dug: *I know she's not a Naga ...*

Grundy: *Right!*

Dug: *What do you mean, right?*

Grundy: *She's Nada Naga. She is a Naga and her name is Nada. Her talent is the ability to change from human to Naga form.*

Dug: *So she is a Naga, but she's Nada Naga.*

Grundy: *That's the first intelligent thing you've said since you started playing this game.*

Fans of Piers Anthony's *Xanth* books and Abbott and Costello's "Who's on First?" routine will immediately be relieved to know this conversation isn't in **Legend Entertainment**'s upcoming *Companions of Xanth*. I use it as the opener, however, to show those who are not familiar with Xanth what a punful place it can be to go adventuring within. In addition, it introduces the unusual looking *femme* on our cover and tips off the fact that the player is going to have to get to know her in order to succeed in this adventure.

Companions of Xanth is based upon *Demons Don't Dream*, the latest Xanth novel from Piers Anthony. In the book, still only available in hardbound at press time, there is an argument between two demons: Earth and Xanth. Those who have followed the series know that these are the dualistic demigods who hold the futures of Mundania (Earth) and the magical land of Xanth in their hands. The thesis for both the novel and the game is that Earth and Xanth have made a bet, a gambit rather like that of Yahweh and Satan in the prologue to Job or like Nickles and Zeuss in Archibald MacLeish's J.B. They have decided to make a wager upon the performance of human beings in a test of wits and prowess.

Indeed, the interesting conceit of the game is that the player's character is Dug Mundane and that the game which Dug plays in the book is the same one, *Companions of Xanth*, which the player has just purchased. Of course, the premise of the game is that one demon has bet on the player's character and that the other demon has bet on a computer-controlled character named Kim. The set-up for all this has some humorous overtones and describing the denouement would reduce the enjoyment of discovery within the game experience.

So, suffice it to say that gamers will assume the role of Dug and adventure within the familiar environs of Xanth. They will encounter notorious puns and familiar characters; they will enter the infamous Gap (no, not *pant*ing for breath) and encounter Stanley Steamer, the Gap Dragon; they will solve the entrance puzzles to get into Magician Humphrey's castle; and they will stare into hypnogourds and end up in the notorious void.

The Legend Evolves

Of course, the first thing Legend veterans are going to say is, "It doesn't *look* like a Legend game." Indeed, the designer has gone far beyond the graphic text adventure approach of the *Spellcasting* series and *Timequest* adventure. It has even gone beyond the interstices of full-screen puzzles, cut scenes and animation in *Gateway* and *Eric the*

Unready. Indeed, the new interface looks like a graphic adventure in the true sense of the word.

In fact, looking at the screen may give people the erroneous feeling that this is a LucasArts graphic adventure in the SCUMM tradition. The art style isn't quite the same and the command/inventory lines are not in the same places on the screen, but that feeling of *deja vu* is initially present. However, that doesn't begin to tell the full story.

The truth is that this is a "smart interface." It is point-and-click like many of those found in graphic adventureland, but the underlying parser is solid enough that it doesn't care about the order in which gamers click. One can click on a verb and then an object, or one can choose an object and then a verb. If one clicks on an object that has special verbs associated with it, a submenu of additional commands appears on-screen. Each object usually has a default verb with it. If the player simply clicks again, that order is implemented. If the player wishes to do something else, the default can be overridden.

When the player clicks on objects and verbs that provide for multiple interpretations, the "smart parser" (that's what we call it, Legend feels like that implies too much of a traditional text game) allows the gamer to pick between possibilities. If a possibility is grammatically possible, but not a possible action in the game context, said command will appear as a "gray" command line to allow the gamer to know that it is not the solution. Though *Companions of Xanth* is essentially a graphic adventure (i.e. contains pictures with hot spots and objects, and limits the basic command list to 10 verbs), it contains over 100 different verbs that can be used at various times during the game.

Further, a lot of design time has been spent in trying to anticipate the weird things that gamers might try to do. So, responses and occasional animated sequences have been placed within the game to supply such contingencies. Another philosophical underpinning for the new interface is that there will be no "Hunt the Pixel" puzzles. As the player sweeps the cursor over the graphics, anything "hot" lights up, but nothing smaller than a post-it note done to scale will ever be important.

The folks at Legend have been concerned that most of their previous games tended to look like pretty pictures surrounded by a sea of text. The new interface makes most descriptions fit into two lines. If the description needs to say more, boxes expand over the inventory and companion boxes at the bottom of the screen in order to allow for more text.

Further, the new dialogue system substitutes a portrait window over the graphic presentations. The non-player character will say something and a variety of responses will be allowed for the player's character. It is point and click like the rest of the interface, but the conversations are dynamic and change, depending on what Dug has said in previous conversation(s) or what he has done.

The new interface shows that the design team is willing to spend some time to draw more than static pictures surrounded by text. Almost every environment within the game has an animation running somewhere in the picture. In Mundania, it is always raining (animated rain) in order to encourage the gamer to learn the interface and get out of the wet, depressing environment and into colorful Xanth. Some of the animated features will be as simple as rain falling, water rippling and bees buzzing, but they reflect Legend's desire to make their screens appear less static to gamers who are intimidated by their traditional graphic text adventures.

Another interesting graphic touch is that the icons in the player's inventory line change to reflect their current status. Remember that puns abound in Xanth, so one can pick a buttercup, remove the butter and use the cup for something else. The butter will appear in the inventory as a pat of butter, but will melt if the player doesn't do something with it. We thought this was a nice touch.

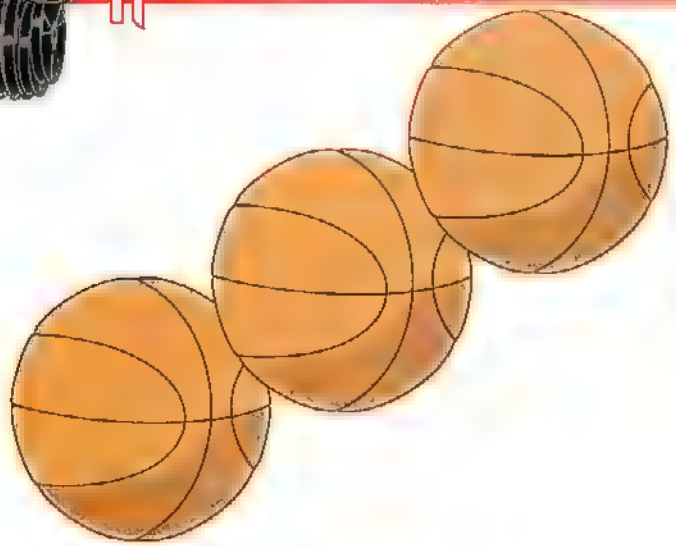
From Scene To Shining Scene

The game also features another new approach for Legend. Since the wager indicates that the player's character is competing against the computer's character, the game uses several settings as opportunities for cinematic cut scenes. These rotoscoped images have been touched up by the animators so that they don't look as rough as most rotoscoped animations, and they tell not only the story of Kim's (the competitor's) progress, but they unveil a secondary plot through "film," as well. In order to keep the Kim cut scenes from becoming too repetitious, players also get to see some of the metastory (remember the wager?) that Dug doesn't know about. These cut scenes show how the demons are reacting to the situation, much like the comments from the popcorn salesman and balloon seller who represented God and Satan in the Broadway play, *J.B.*

Xanth is a fascinating place and the graphics/music of the game do their best to present some of its diversity. Though it is a reasonably sized game, the design philosophy is to have no environment larger than 15 rooms and no puzzle which requires the player to backtrack unreasonably. The desire is for players to experience the fun and whimsy which is Xanth without getting frustrated

Michael Lindner, designer of the game, was producer of *Spellcasting 201* and *Frederick Pohl's Gateway* (as well as co designer of *Gateway*). His biggest challenge, in addition to remaining true to the universe described in more than a dozen Xanth books, is to interweave his "Ron Gilbert" philosophy of player-friendly design with the reality that Xanth, for all its frivolity, is still a dangerous place. In balancing the humor and the danger, lies his challenge.

Gamers who like puns will definitely want to play *Companions of Xanth.* Those who are offended by word play, need not apply. As for me, visiting Xanth is always worth the effort. CGW



Air Ball

Michael Jordan in Flight from Electronic Arts

by Wallace Poulter

"Oh, he flies through the air with the greatest of ease,
That daring young man in his high top Nikes."

Basketball, funny enough, is the primary reason that soccer has never become popular in the U.S. In the rest of the world, soccer (or football as it is known worldwide) is the working class sport of the masses. Anyone who walks into any run-down public housing track in the U.K. is likely to see groups of kids playing soccer with almost anything: a real soccer ball, a soft drink can, a tennis ball or even a rock. Meanwhile, in the U.S., basketball is the king of the inner-city environment and it is here that some of the best ball is played in 3-on-3 tournaments. The fact that Jordan is allowed contractually to play in such 3-on-3 tournaments was a surprise.

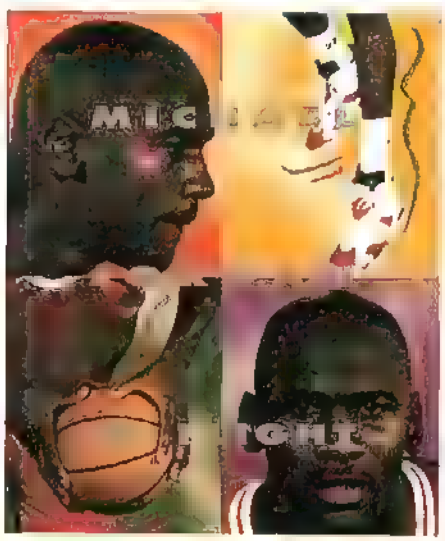
Jordan in Flight (*Jordan*) arrives in a large, gaudy, two and one-half-inch deep box. Of this, some one and three-fourths inches of the box amounts to air. This, of course, might be appropriate for Air Jordan, but in these ecologically sensitive times one has to wonder why so many trees were sacrificed to the god of packaging.

Further, one must question the wisdom of a sports simulation where a 486/33 is the recommended platform. Flight simulation fans may have high-end machines of necessity, but we doubt many sport game fans do (especially in a market where some of the best sports products remain text-based). On the reverse side, of course, one could praise EA for pushing the envelope.

The Tip

First impressions are incredible. The 3D-based graphic engine is so far ahead of everyone else, it is amazing. The manual claims that flight simulation algorithms are applied to let the player view the game from any distance or angle. However it is done, it is breathtakingly impressive. Immediately upon jumping into a 3-on-3 exhibition game, the full array of Jordan's impressive shot-making ability is available. From the quick first step around the defender to a leaping wraparound dunk, *Jordan* is a continuous flow of superb 3D animation. Mouse control is easy to use, and the number of actions available is kept to a minimum, which helps the ease of play and keeps the simulation accessible to all levels of players.

The video replay and video edit option allow the user to not only replay the previous play, but to create and manipulate one's very own highlight film. The interface for these options continues to improve and *Jordan in Flight* provides such functionality in a very logical and friendly fashion. The replay and highlight part of the product should be a significant part in any purchase decision. If the user enjoys putting together highlight films of their greatest achievements, this is a major plus.



Setting a Screen

The manual is particularly impressive, although not for its look, which is almost exclu-

TITLE:	Michael Jordan in Flight
SYSTEM:	IBM (486/33, 4 MB RAM recommended, 3.5 MB HD space)
GRAPHICS:	VGA (with 1 MB video RAM recommended)
PRICE:	$69.95
PROTECTION:	None
DESIGNERS:	Mike Suarez, Greg Zumwalt, Michael Jordan
PUBLISHER:	Electronic Arts San Mateo, CA (800) 245-4525

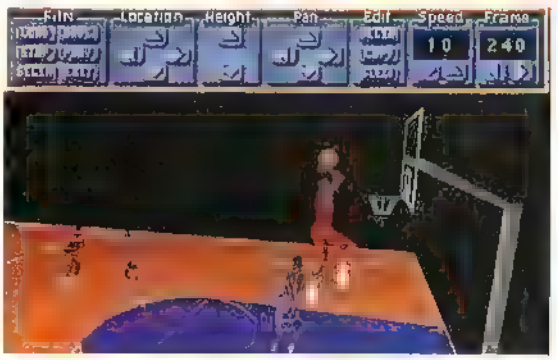
Anything You Want...

You Got It!...

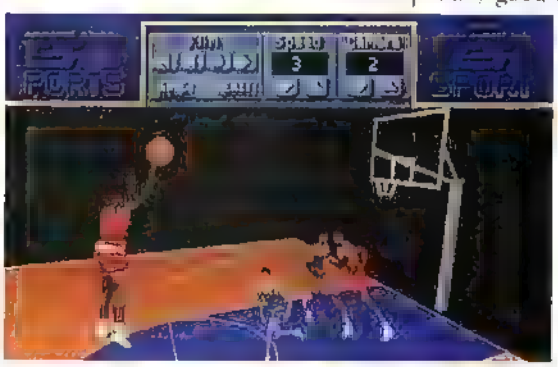
sively red, white and black. Maybe this was some attempt to convey the colors of the Chicago Bulls. What is impressive is that four of the first pages deal with such matters as "Video Mode Support," "Sound Card Support," "Performance Issues," "Potential Graphic Anomalies," and "Troubleshooting." Someone took a lot of time testing the compatibility of *Jordan in Flight* and they should be applauded for their effort. In addition, Mitchell Anthony has done some entertaining work with some flip-book animation in the manual. This is a nice little touch that underscores the craftsmanship that went into the product.

In the Paint

Game play revolves around a 3-on-3 tournament held among teams based in some of the horbeds of street baskerball. Manhattan, NY, Oakland, CA, Lowell, MA are all represented, along with Jordan's own Wilmington club. For some reason, though, there is no team from the streets of Chicago, where some of the nation's best street baskerball is played. Multiple oprions keep the game interesting for a while. Six different scoring or time methods are available from being the first to score eleven baskets to using 12 minutes per quarter. In the latter, there is some strategy involved, as tiring teammates will have to be substituted to keep the team fresh.



There are three levels of difficulty, Street Ball, College and Pro. Unfortunately the Pro level is far too easy, and the reason can probably be traced to the fact that the product is based on Michael Jordan. Jordan is just too good overall and, as a result, you don't need the other players to develop a successful strategy. There are two different strategies that will win almost every time. The first is for Jordan to exclusively take 3-point shots. Jordan is so good that he hits almost 50% of the time. A quick look at the mathematics will show you that the opposing team must shoot over 80% of their 2 point shots to beat the Jordan-led Wilmington team. A second option is for Jordan to keep the ball and run around, shielding the ball, until an angle to the basket is established. Then, head for the basket for a satisfying slam.



I also found that the best team was created by selecting the best rebounders. In this way, I could compensate if I missed a shot taken by Jordan on the outside. This way, the offensive rebounding strength would afford him second and third chances.

There are four specific plays included with the game. These are the low post cutter, high post cutter, back door screen and give 'n go. Again, if the game was more challenging, these would be useful. As it stands, there is little need for them.

Foul Trouble

What is it about basketball simulations? From the original "Larry Bird and Dr. J do very little" through "Michael Jordan and Larry Bird do even less," there has seemed an inability to transfer a good game to the PC market. To quote from the manual, "It has taken a long time and a great deal of ingenuity on the part of a dedicated team of technicians (all Michael Jordan fans)." And therein lies part of the problem. *Michael Jordan in Flight* could have used the critical eye of a non Jordan fan. In fact, the whole product has a breathless hero worship aspect about it, which gets to be tedious. The box copy announces "Revolutionary video-sim (TM) technology captures all the air artistry of Michael Jordan with unprecedented realism." That's an extremely accurate description, but you will note that there is no mention of a "game" in that description.

Again quoting from the manual, "We chose to set Jordan in a 3-on-3, half court game because it's the best format in which to showcase his talent." It would have been more refreshing to see "With a recommended set up of a 486/33, if we had gone to 5-on-5, the game would have been horrendously slow."

Hitting the Three

After especially good or poor shots, a pop-up video of Michael Jordan is played. Such lines as "What a brick" and "Maybe you should take up golf" accompany one's less impressive efforts. I did get a chuckle from the Jordan voice over, that appears occasionally during the game, when he spoke of it being time for the North Carolina defense. Dean Smith, the North Carolina Tar Heels head coach and Jordan's college coach, is generally credited as being the only person who could hold Jordan under 20 points a game.

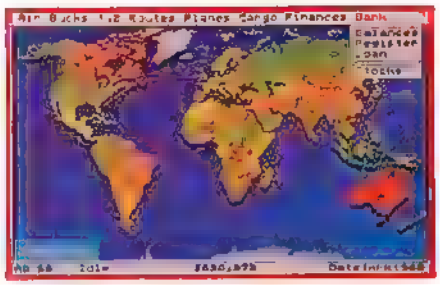
At the Buzzer

Michael Jordan in Flight is the most visually realistic sports software on the market . The Video-Sim (TM) technology is indeed revolutionary, and Mike Suarez and Greg Zumwalt should be congratulated for bringing us closer to a more realistic depiction of the sport. *Michael Jordan in Flight*, however is only half the process. Now, they need to apply the technology to a game. **CGW**

Check out the *New* Air Bucks!

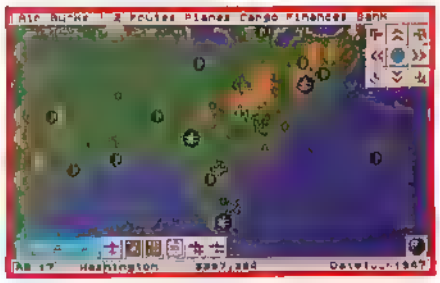
Due to overwhelming response to Air Bucks, Impressions are delighted to announce an upgraded version of the game, to give you, the player, the features you want!

Better Graphics



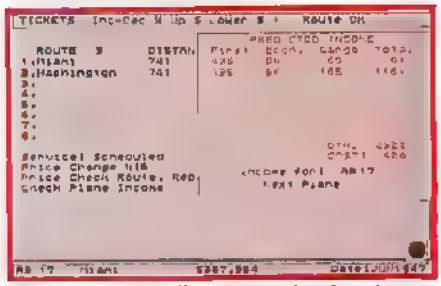
256 color VGA graphics are used throughout the game

Animated Zoom Mode



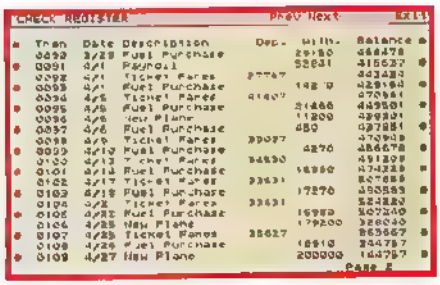
Watch your planes fly around the world; city selection & all other commands can be made from here

Better Interface



More user-friendly menu selection, better mouse & faster typing

More Reports



Detailed data on plane demand & costs is easily accessible

Among the many other enhancements made to the game are: *Upgraded economic model & computer player AI, sound effects, personalisation of airlines, check register, better mouse & typing handling, city sizes now from 1 to 100 & vary thru time, print to paper options & lots more!*

AIR BUCKS v.1.2

available free to all registered users of Air Bucks 1.0/1.01

***Impressions* Committed to customer satisfaction in strategy entertainment!**

Circle Reader Service #64

THE VERY BEST IN STRATEGIC STARSHIP COMBAT

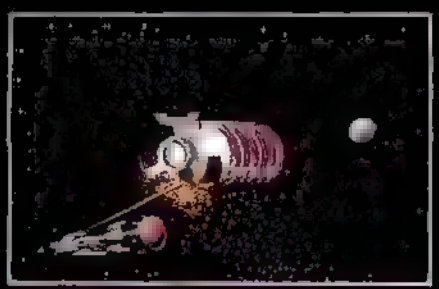
Impressions are delighted to announce an Omnitrend production - Rules of Engagement 2!

The original became an instant success -"one of the top 6 games of 1991" (Newsweek), "involving, well-planned, entertaining, highest levels of intelligence and excitement" (Computer Game Review).

Now, the sequel surpasses even the original's excellence!

Rules of Engagement 2 is a real-time, strategic space combat game. The player commands a fleet of starships engaging enemy ships in campaigns composed of multiple combat missions. The attention to realism and detail (Omnitrend's hallmark) and the sheer size of the game are phenomenal, and are made accessible by the unique easy to use control system.

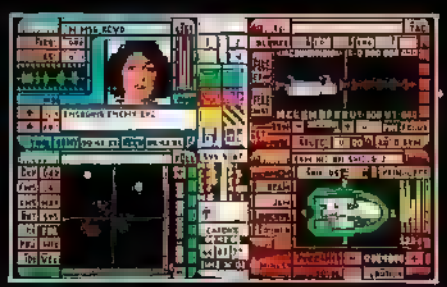
Rules of Engagement 2 is the latest Interlocking Game System module - and can link with *Breach 2* or *Breach 3* (coming this fall).



a still from an animated squence

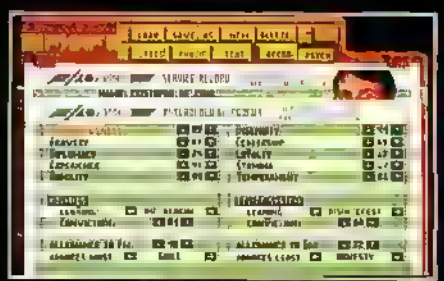
• Exciting animated sequences featuring 3D rendered spaceships relate the storyline at strategic points within campaigns. Players can create their own tree-structured campaigns with the world's first campaign-builder - and can even include their own PC Animate Plus animation files!

• *Rules of Engagement 2* features an outstanding interface. Game screens consist of four QuadPanels, color coded to distinguish different control systems. The central control bar coordinates all activity between panels. Users can select which of the 28 QuadPanels appear on the main screen - and can even save several configurations for use in different situations.



sample configuration of QuadPanels

• *Rules of Engagement 2* offers a significant advance in artificial intelligence within computer gaming. Each starship captain has a substantial dossier complete with many personality traits which affect how he, she or it reacts to orders and situations which arise.



a starship captain's dossier

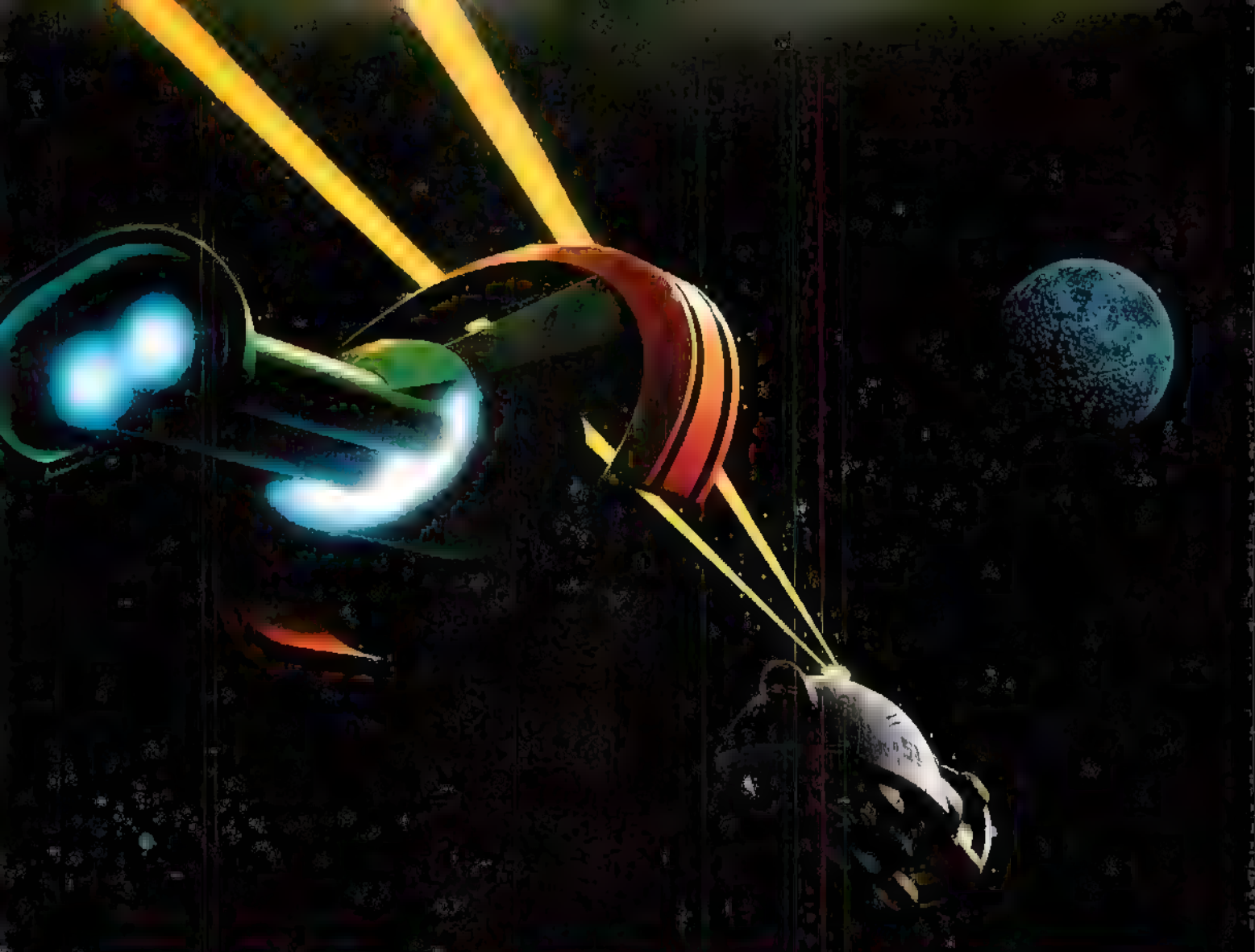
outfitting a ship in dry dock

• *Rules of Engagement 2* offers immense replay value, allowing the player to design and construct both friendly and hostile spacecraft and their captains, specify the physical and mental capabilities of the enemy forces -- and design solar systems in which the battles will take place!

Committed to Excellence in Strategy Entertainment

Impressions Software, Inc. 7 Melrose Drive, Farmington, CT 06032.

Circle Reader Service #65



RULES OF ENGAGEMENT 2

OMNITREND

INTERLOCKING GAME SYSTEM™

Impressions

Circle Reader Service 165

Tips and Tactics for LucasArts' X-wing

by Rusel DeMaria

These tips and tactics have been excerpted from the forthcoming book, X wing: The Official Strategy Guide *by Rusel DeMaria and Prima Publishing. Along with the following general tactics, the book will include complete descriptions of every mission, strung together with well-written fiction that supports and enhances the fiction of the game. The book will be available in June for $19.95.*

STANDARD OPERATIONAL DIRECTIVES: STARFIGHTER COMBAT

Situational Awareness and Energy Management

A Rebel Starfighter Pilot needs more than dogfighting skills to defeat the Empire. Situational Awareness and Energy Management are the two keys to developing effective starfighter tactics. Situational Awareness is knowing where you are, where your enemy is, and what you need to do to accomplish your mission goals. Energy Management is configuring your ship's power system to achieve the maximum efficiency. Proper use of these skills will depend on your ability to constantly analyze and reassess your situation in a rapidly changing environment.

Situational Awareness and the Combat Multiview Display (CMD)

The CMD is the most important part of your targeting system. The very first thing you should do at the start of any mission is query the CMD (in ID mode) for the nearest enemy fighter [R]. Note that, though armed, Shuttles and Transports aren't considered "starfighters" and will not be selected by the targeting system in this manner. If there are enemy ships nearby, you will have to decide quickly whether to engage or proceed. **You should consider yourself already under attack if there is an enemy less than 2 klicks distant!** Using the targeting system and the CMD, quickly cycle through all of the craft displayed on your sensors, noting their type and distance [T or Y]. Pay particular attention to those ships most critical to your mission. As time allows, assign them to the memory locations of the targeting computer for quick reference during the mission [**Shift-F5-F8**]. As new ships enter the area your R2 or ship's computer will alert you with an appropriate message. Target the new arrivals in the CMD to see how they affect the overall situation. As you do this you should be building a mental map to help you determine the best way to achieve your mission.

Energy Management and the ELS Display

The primary consideration during any mission is what power configuration will optimize your chances for success. There are three main elements of concern. These are the Engines, Weapons and Shields. Depending on mission goals and the needs of the moment, energy levels may be optimized for maximum speed, firepower or defense. There are always trade-offs and you will have to learn the pros and cons of each. As the mission proceeds you may find it necessary to make frequent adjustments. There is no "perfect" configuration. Nevertheless, you should always strive to maintain fully supercharged cannons and full primary and secondary shields.

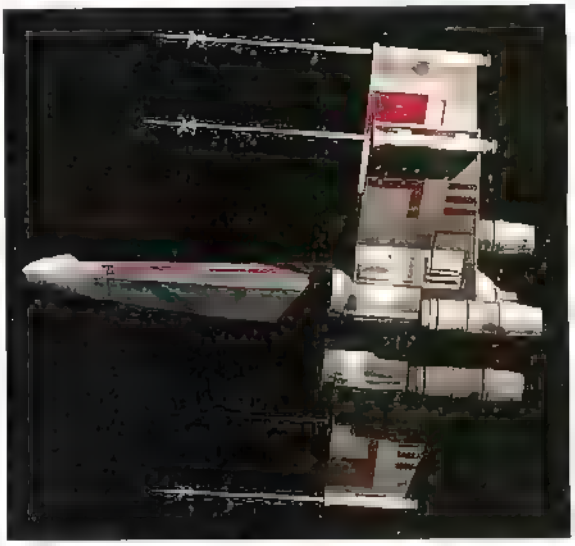
Here are some tips for managing energy in battle:

- **Shift weapon energy to shields.**
  When you begin a mission you will find your cannons are already at their supercharged levels. Your primary shields will be fully charged, but your secondary shields will not be charged at all. Note that the cannons recharge more rapidly than the shields. Experienced pilots have found they can bypass certain inefficiencies in shield recharge rates by setting the cannon recharge rate at maximum and then transferring that energy to the shields [' or **Shift-F10**]. Quickly build up your secondaries by transferring any accumulated cannon energy directly to the shields.
- **Use shields to store energy.**
  Shields dissipate energy more slowly than the cannons. Use shields to store energy like a battery. When you are redirecting as much energy as possible to the engines for greater speed, but still wish to maintain your shields, you can keep the shields at their normal recharge rate and redirect all the cannon energy to the engines. Then, when you need to fire your weapons, you can quickly transfer shield energy to the cannons [; or **Shift-F9**]. Don't forget to reset the recharge rate for the cannons!
- **Use cannons to charge shields.**
  Another alternative which allows good speed, shield maintenance and some firepower is to redirect all shield power to the engines and set the cannon recharge rate to one above normal. Then manually transfer cannon energy to the shields every few mo-

WHEN TWO WORLDS WAR™
Command your entire planet's military resources in an effort to conquer a hostile neighbouring planet. You control a state of the art workstation from which advanced software tools enable you to design new craft, research new technologies, build new installations & craft, set up highly sophisticated missions - and watch the progress of this strategic interplanetary conflict.
Battles take place in space & on surface of both planets
Random planet generator for great replay value
Designed as a 2 player game!
Design your own spacecraft (or tanks, submarines, jet...)
Send out units on missions to explore the unknown enemy planet - and wipe out the military gaggle (...)
Impressions Committed to Excellence in Strategy Entertainment
Impressions Software 7 Melrose Drive Farmington, CT 06032
Circle Reader Service 166

ments. This increases your workload, but in a low threat environment where you're not actually using the cannons very much this works well. You can actually build up a full charge for both systems this way!

- **Redirect energy to engines for maximum speed.**
For maximum possible speed you will need to redirect both cannon and shield energy to the engines. As long as you have already maximized your shield strength first, you should have a few minutes before that energy dissipates. Note that normal recharge rates merely maintain current energy levels.
- **Redirect energy to other systems to slow down.**
This is the corollary to the previous rule, but is sometimes overlooked by novice pilots. When it is necessary to reduce speed, like when you want to keep a slower-moving target within range, you may choose to redirect energy from engines to shields or to weapons instead of cutting your throttle. This way, you achieve the speed desired, but also gain additional charging for other important systems. Just don't forget to correct your settings when more speed is required.



Weapons, Targets, and Firing Configurations

Weapon selection and firing configuration decisions will often determine the success or failure of a mission. There are a few general rules that apply to almost every situation.

Homing Projectiles: Homing projectiles such as **concussion missiles** and **proton torpedoes** are intended to give you some "standoff" attack capability. Since these are "fire-and forget" weapons, their rapid deployment can help you quickly even the odds in your favor.

Torpedoes are designed for attacking larger and slower ships. Torpedoes, though faster than a starfighter, can't turn as well. An alert pilot can always evade one, so avoid using them against starfighters unless the enemy is flying straight and level or in a head-on attack. Also, it should be noted that Imperial doctrine prohibits "wasting" torpedoes on starfighters so you probably will not find yourself targeted by one. Concussion missiles, on the other hand, are designed for dogfighting. *Because of their great speed they are also somewhat effective at intercepting torpedoes.*

When targeting large enemy ships you must be within 6 klicks to get a lock-on. Against small ships the distance must be less than 2 klicks. At extremely long range you must keep the target absolutely centered in the targeting box. You will discover that Imperial ships are able to achieve solid lock-ons while you are still "acquiring" your lock. This is one area in which they maintain a slight technological edge.

Cannons: For most combat and almost all dogfighting you will rely on your cannons. The dual fire mode has proven to be the most effective compromise when considering power, targeting opportunities and firing speed. In the Y-wing this is especially true because the cannons are in a twin mounting that places their fire in a very small area. If the target is going to be hit at all, it will be hit by both guns and may as well receive the double shot! In the X-wing, and to a lesser degree the A-wing, dual-fire mode is preferred because the wing-tip mounting of the cannons allows a much larger area to be considered by the targeting system. Although this results in a less efficient use of cannon energy (since up to half the shots may miss), it is offset by the benefit of having more firing opportunities against a small, rapidly maneuvering target such as a TIE Fighter. *In fact, because TIE Fighters are smaller than an X-wing's wingspan they can find safety between the cannons right in the center of your targeting box!*

General Notes On Combat

Combat in space is all about positioning. You want to be in a position to hit the other guy, and you want to avoid being in a position where he can hit you. In engagements between starfighters this is a straightforward task. A starfighter's weapons all face forward, so if you can position yourself on the enemy's tail and stay there, you will defeat him.

- **Dogfighting to the End**

When dogfighting, pick a target and stay with it until you have destroyed it. (See the rule relating to Hull Damage for an exception to this rule.)

- **Breaking up a Formation**

When breaking up an attack by several enemy ships in formation, your primary task is to keep firing long enough to force a particular ship to break formation. Proceed to attack each ship in the formation until all have been forced out of their attack run. After that, destroy at will or continue with mission objectives.

- **Using Missiles on a Flight Group**

When attacking a multiship flight group with missiles or torpedoes, lock and fire as quickly as possible. If a missile or torpedo is evaded at first, don't worry; it will continue to track the target. After you have fired at each of the enemy ships, go back through the target list to the earliest one that still survives. Fire another projectile if necessary, but try to take it out with cannons if you can. Remember, there aren't any reloads in a dogfight! Use them wisely. (When employing missiles or torpedoes against stationary targets it is not necessary to get a solid lock. A few seconds of "yellow" is sufficient).

- **Escort Duty**

When flying a defensive patrol stay within a few klicks of the vessel(s) you are protecting. When you move to intercept any attackers try not to go more than eight to ten klicks away. A second attack on the other side will catch you too far away to get back in time. Also, when protecting other ships try to draw off the fire of large enemy ships by flying within range of their guns and popping off a few shots yourself.

- **Suicide Attacks**

In a one-for-one war of attrition the Empire will win. They know this and will not hesitate to spend their starfighters in suicide attacks against ours. In a head-on attack never assume an Imperial pilot will try to avoid colliding with you. His devotion to the Emperor, his honor and bravery are all confirmed when he dies while destroying the forces of the Rebellion. Fortunately for the Alliance, the ruggedness of our starfighters enables them to withstand most collisions with enemy starfighters. This is especially true when all shields are fully charged. However, despite the fact that these collisions usually result in the destruction of the enemy fighter, this is not considered a good tactic!

Note that due to the rate of closure during head-on attacks, you can start firing at 1.7 to 1.9 klicks. When making a head-on attack into

We're Looking For People Who Like To Draw.

They call him ***Freddy Pharkas, Frontier Pharmacist.*** He was born to be a gunslinger. But when he met his match, he gave it all up for a life in pharmacology.

Now his arch enemy is back. And Freddy learns life's hardest lesson, you can't hide behind a pharmacy counter.

Al Lowe, the creator of ***Leisure Suit Larry*** has gleefully pillaged the plots of every old Hollywood Western and stolen - er, created - the legend of Freddy Pharkas, a stirring Western sage of cowboys and Indians, banditos and mysterious strangers, women of ill repute and the men who repute them. With his faithful Indian sidekick, Srini Bagdnish, Freddy's aiming for clean up Coarsegold once and for all. And woe to any cliché that stands in his way.

Play the only computer game that hands you a loaded six-gun and doesn't teach you how to use it. ***Freddy Pharkas, Frontier Pharmacist.*** And see if you're as good with a gun as you are with a mouse.

SIERRA®

See your local retailer or call 1-800-326-6654.

Circle Reader Service #105

heavy fire you are advised to avoid enemy fire by maneuvering in a "corkscrew" manner until you have closed to dogfighting range. Then, when your target flies past, turn behind him and attack.

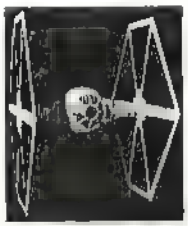
In the case of TIE Fighters or any other fighter with hull damage, you can maintain a straight and level head-on attack because the target will be destroyed with only a few shots. This is risky, however, as you will take several hits to your forward shields.

- **The "Wotan Weave"**
  Learn to do the "Wotan Weave." This is a spiral or corkscrew maneuver that will enable you to avoid enemy fire while maintaining a particular heading.

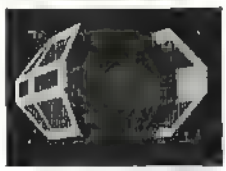
  First target the craft you wish to head towards (or away from). With this as your reference point, start turning while simultaneously pulling back (or pushing forward) on the stick. If you are doing this correctly, the targeted craft's blip will appear about half way from the center of the appropriate sensor display. Your stick will be approximately half way towards a corner position, but will require constant small adjustments. Generally speaking, when avoiding fire from a large ship use a slow spiral. (The greater the distance the slower the spiral.) When avoiding enemy starfighters (or missiles) a tight fast spiral is best.
- **Attacking Large Ships**
  When attacking large ships the "Wotan Weave" is absolutely essential for making repeated attack runs. The standard method is this:

  1) Have shields and cannons fully charged, with recharge rates at maximum.
  2) "Weave" in and begin firing at 1.6 klicks and maintain fire as you close on the target. You may wish to reduce speed to keep from getting too close. This will also serve to maximize your fire on the target.
  3) When you've taken enough hits to require breaking off, reverse direction and full throttle.
  4) Transfer all available energy to the rear shields.
  5) Start "weaving" and continue to fly away until out of range or ready to make another run.
  6) Restore shields to even distribution.
- **Balancing Shields**
  Whenever you've taken a few hits, be sure to even out your shields. Press S three times. This is especially important when you are going to transfer energy from the cannons to the shields. The reason is that if, for example, your forward shields are down, but your rear shields remain at full, you won't be able to transfer the energy! (Our engineers are working on this.)
- **Missile Escape Maneuver**
  To avoid a missile you must have it targeted in the CMD. You must be moving at high speed (at least 100). Turn away from the missile, then when it is about 0.4 klicks away turn hard towards it. Assuming you are successful, keep turning toward it until it self-detonates. Because Y-wings are generally unable to do this, greater reliance must be made on their stronger shields and hull.
- **Keep Cannons Supercharged**
  Supercharged cannons fire farther as well as hit harder. Need we say more?
- **Know Your Target**
  Know your target's characteristics, especially speed and armament. When closing to "dogfighting" range, (less than 0.75 klicks), match speed with your target. This will help you stay on his tail and keep you from overshooting into a disadvantageous position.
- **Control Energy; Control Speed**
  Use ELS configuration adjustments to control speed. In the X-wing and A-wing each level adjustment to the lasers or shields will result in a 12.5% change in engine power level. For the Y-wing there is a 6.25% change. The actual adjustments are rounded up in your favor.

Special Characteristics Of Imperial Star Fighters



- **TIE Fighter**
  The most common Imperial starfighter, the TIE is small and highly maneuverable. Like the TIE Bomber and Interceptor, it has no shields and even less armor. Cruising speed is the same as the X-wing. Quite deadly in the hands of a skilled pilot, it is nevertheless completely outclassed by all Rebel fighters.



- **TIE Bomber**
  TIE Bombers are the most heavily armed Imperial fighters. Each TIE Bomber carries lasers, concussion missiles, and proton torpedoes! In some ways, the TIE Bomber is comparable to the Y-wing. They have the same cruising speed and are the "heavies" of their family. Though not as challenging in a dogfight, its missiles make it the most dangerous of all the Empire's starfighters...beware!

- **TIE Interceptor**
  The TIE Interceptor is a faster TIE Fighter with a stronger hull and four cannons instead of two. With a cruising speed equal to that of the A-wing, the TIE Interceptor is much more dangerous than its predecessor. In the hands of a highly skilled pilot it is very tough to beat, especially in a Y-wing.
- **TIE Advanced**
  The latest in TIE starfighters is the TIE Advanced. Like others in this family, it has no hyperdrive capability, but it does have shield generators. Its shields are not very powerful but they regenerate quickly. Because it is so difficult to hit there is usually enough time between hits for the shields to recover.

First encountered during the Battle of Yavin, this craft is even faster and more maneuverable than the A-wing! Even in the hands of a mediocre pilot this is an extremely formidable dogfighter. However, TIE Advanced pilots require considerably more training than pilots of other craft. Fortunately, the Empire has yet to produce significant numbers of them. Needless to say, it is even tougher to beat than the TIE Interceptor, and almost impossible for a Y-wing.

- **Assault Gunship**
  The Assault Gunboat is the first Imperial design to incorporate shields and hyperdrive capability. Its cruising speed lies between that of the Y-wing and X-wing. This one also carries concussion missiles, making it quite dangerous in combat. Apparently learning from the Alliance, the Empire has begun to employ these

Wotan Weave

Speed Chart

X-wing	100
Y-wing	80
A-wing	120
TIE Fighter	100
TIE Bomber	80
TIE Interceptor	110
TIE Advanced	125
Assault Gunboat	90
Transport	55
Shuttle	65

gunships, using hit and fade tactics similar to ours! Operating in small independent groups, they also conduct armed reconnaissance and are often the prelude to major Imperial attacks.

Communications In Battle

[Shift-A] (Attack Target!) is the most important wingman command. Use it often, especially when the enemy is coming from more than one direction. It is also a good way to get concentrated firepower on a single target such as a Freighter or Corvette when you wish to destroy it as quickly as possible.

[Shift-C] (Cover Me!) should be used with caution. The reason is that if your wingman is already engaged and you order him to come to your aid, he will ignore the enemy he was fighting. That enemy will now have an easier time getting your wingman! Note that you must be currently targeted by an enemy craft to get a response.

[Shift-I] (Ignore Target!) should also be used with caution. It is useful for getting a wingman to break off an attack, (should you wish to finish his target off yourself), but may make your wingman a sitting duck! You may notice that despite acknowledging your order, your wingman may continue pressing the attack.

[Shift-W] (Wait for Further Orders!) should be used with extreme caution. It is more effective for getting a wingman to break off an attack but will definitely make him a sitting duck!

Hits To Kill Table

CRAFT	LASERS Shlds Dn/Kill	MISSILES Shlds Dn/Kill	TORPEDOES Shlds Dn/Kill
X-wing	11/4	2/1	*/1
Y-wing	16/9	3/1	1/1
A-wing	11/3	2/1	*/1
TIE Fighter	*/2	*/1	*/1
TIE Bomber	*/6	*/1	*/1
TIE Interceptor	*/4	*/1	*/1
TIE Advanced	12/4	2/1	*/1
Assault Gunboat	21/6	4/1	1/1
Shuttle	21/5	4/1	1/1
Transport	15/10	3/2	1/1
Space Tug	*/1	*/1	*/1
Cargo Container	40/8	7/1	2/1
Bulk Freighter	97/24	12	5/1
Corellian Corvette	81/40	12	4/2

The first number is the usual minimum number of blasts necessary to bring the shields down. Shields regenerate, however, so if there is a pause in the attack more shots will be necessary. The second number is the number of additional shots to destroy the target. For example, an Assault Gunboat's shields begin to fail after taking more than 20 hits. They may not completely fail for a few more hits, and then the hull itself can take a few more shots. Note that these figures are based on continuous fire with supercharged lasers. Also note that concussion missiles are not effective against the larger vessels.

- **Hull Damage**
  At a certain level of hull damage a ship will automatically head towards its mothership or its hyperspace exit point. Unless their complete destruction is a part of your mission objective, let ships with hull damage go. If the arrival of other enemy ships depends on their destruction, this will help delay them.
- **Pilot Skill Level**
  When assigning pilots, don't worry about the default skill levels. You can only improve their skill levels. If the pilot you assign is less skilled than the one who was assigned when the mission was built, no change will occur. Of course, you may still lose the pilot in combat!
- **Nonplayer Starfighters**
  Note that nonplayer craft will not fire torpedoes at enemy starfighters, or missiles at other enemy craft that are not starfighters.
- **Highlighted Ships**
  The highlighted red part of a ship displayed in the CMD has no meaning except in the case of the Star Destroyer.
- **Brushing Off Your Wingmen**
  When doing close fly-bys of other ships, avoid rolls and hard turns if you have wingmen. They try to maintain position and will often collide with the craft being flown by.

[Shift-G] (Go Ahead and Engage!) to order "waiting" ships to get going.

[Shift-H] (Head Home!) is useful for those pilots who are so skilled that wingmen just get in the way, (and prevent you from making ALL the kills!) Be careful, though, as this is another way to make it easy for the Empire to kill one of yours. The reason is that the ship receiving this order will have to make it to its hyperspace jump point, which may be some distance away, and will be vulnerable until it gets there.

Note that in the heat of battle, discipline is often difficult to maintain. Avoid putting yourself between a wingman and his target and you will avoid "friendly fire."

The Farlander Diaries

The following is excerpted from the combat diaries of the Rebel warrior, Keyan Farlander. The two entries were written during his first tour of duty, and contain detailed descriptions of the two most dangerous of his early missions.

OP 4: Protect Medical Frigate

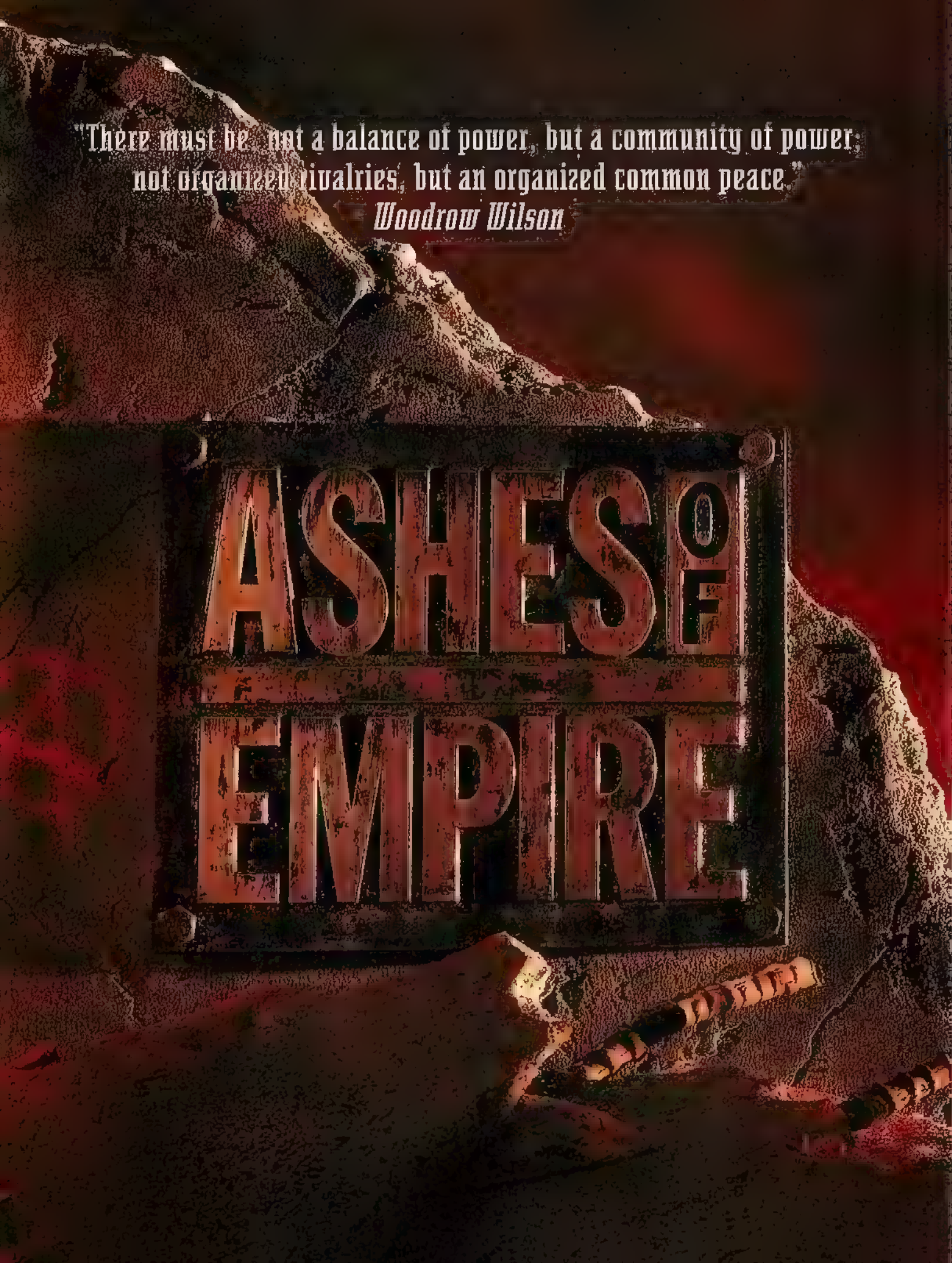
Mission Briefing

The wounded from the attack on Briggia are being brought to a Medical Frigate. You must provide security while the wounded are being transferred onto the Frigate. Three Medevac Shuttles and the Corvette *Korolev* must all escape into hyperspace after delivering their cargo of wounded. First the Shuttles and then the *Korolev* will dock and unload. *The Corvette Korolev and the three Medevac Shuttles must all survive.*

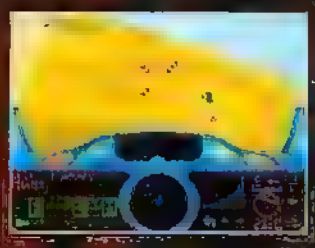
Farlander's After Action Report

I hypered in and began my mission start sequence, charging up shields first. The mission began quietly, but then an Imperial Frigate, the *Warspite*, dropped out of hyperspace about 11 klicks away and launched a group of three TIE Bombers and two TIE Fighters, then hyperspaced away. Immediately, I targeted a Bomber, wishing I had more help, then headed toward it at full throttle. With fully charged shields I set the shield recharge rate to normal and redirected all cannon power to the engines to get my speed up to 125.

I switched to torpedoes, then when I got within 3 klicks of my target I reset shield and cannon recharge rates to maximum to bring my speed down to 50. Keeping my hand steady on the controls, I fired my first torpedo head-on because the distance between us was still greater than 1 klick. Any closer and I would have had to turn onto


"There must be, not a balance of power, but a community of power;
not organized rivalries, but an organized common peace."
Woodrow Wilson
ASHES OF EMPIRE

You must choose your own diplomatic strategy when dealing with people.



Flying one of many vehicles, you attack a ground target.

Each town holds the potential of new allies and resources to acquire.

The harsh reality of an empire torn apart.

In a modern world, what happens when empires fall... Inspired by the tumultuous events in Eastern Europe, Mike Singleton and his team have created Ashes of Empire, their biggest game to date. Ashes is a complex fusion of adventure and strategy which places demands on all your powers of diplomacy and intelligence. As you enter the heartland of your one-time great adversary, you must find a strategy to bring order to chaos, while at the same time avoiding the initiation of a nuclear conflict with an embittered and desperate people, mistrustful of your intentions in this New World Order.

- Free instructional videotape
- Keyboard function overlay
- Over 6,000 unique characters
- Full free movement in a 3-D environment of 2.8 million sq. miles and 1,000 locations.

Circle Reader Service #57

GAMETEK

Distributed by Gametek, Inc. Packaging © 1993 Gametek, Inc.. Gametek is a trademark of IJE, Inc. 2999 NE 191st Street, North Miami Beach, Florida 33180. Ashes of Empire is a trademark of Mirage Technologies Multi Media Ltd. Licensed by Mirage Technologies Multi-Media Ltd. © 1993 Midnight Technologies Ltd. All rights reserved.

the Bomber's tail and then fire. As quickly as I could, I locked up and fired on the other two Bombers. I knew I couldn't afford a miss because my computer told me that the *Warspite* had returned to normal space — on the side of the Medical Frigate opposite me. And it was launching more TIEs!

Once again I redirected cannon power to the engines and set the shield recharge rate to normal. When the TIE Fighters got too close, I used the "Wotan Weave" to evade them. I knew I could not stop to dogfight them, but had to destroy the second wave of TIE Bombers the *Warspite* had launched! Once again, I slowed down when I was within 3 klicks of the Bombers and fired torpedoes as soon as I had a solid lock. Then I finished off the other two Bombers before they could launch their own missile salvos.

Finally, I turned my attention to the TIE Fighters that had been dogging me the whole time. As I was engaged in dogfighting still more TIEs, the mission complete message came up on my display.

[redacted]

OP 10: Rescue Sullustan Leader

Mission Briefing

The Empire has kidnapped the Sullustan leader. You must rescue him from the Empire in order to secure Sullust as an ally of the Rebellion. You will drop out of hyperspace about three klicks behind a formation of five Imperial Shuttles escorted by a half dozen TIE Fighters. They are on their way to the Star Destroyer *Invincible* 22 klicks distant. With your Y-wing you must identify and disable the Shuttle with the Sullustan leader. You will be accompanied by a pair of X-wings. *SHU Kappa 5 must be boarded and SHU Rescue 1 must survive.*

Farlander's After Action Report

Well, I'm not sure why I got to fly the Y-wing while Hamo got an X-wing. Maybe it had something to do with my success when I rescued the prisoners. Whatever the reason, I had the job of identifying and disabling the shuttle with the Sullustan leader in it.

I began my start sequence, but dropped throttle to 2/3 and switched to lasers. A quick survey of the CMD showed me that TIE Fighter group Alpha was about to turn and attack me and I figured to take out at least one in a head-on pass. Then I switched to torpedoes as the remaining T/Fs continued past me and fired one torpedo at each Shuttle — not to destroy them, of course, but to weaken their shields.

Now I noticed that some Shuttles turned to fight back, clearly not the ones with the prisoner. I reselected my lasers and took them out. The one remaining Shuttle was the one I had to disable. It was still on course for the *Invincible*. So I wouldn't lose it, I targeted it in the CMD and assigned it to a memory location, using the "Wotan Weave" as I closed in because the remaining TIEs from group Gamma were on my tail. Some TIE Interceptors from group Beta seemed to want to join in as well, but I couldn't take time to fight them yet. I had to disable the Shuttle before it got too close to the *Invincible*.

Switching to ion cannons and checking that they were on dual-fire, I disabled the Shuttle as soon as I was in range, then switched back to lasers.

The Alliance Shuttle *Rescue 1* jumped in once the Shuttle was disabled. Now I had to protect both Shuttles until the mission was complete and the Sullustan leader had escaped into hyperspace.

I brought *Rescue 1* up in the CMD and assigned it to the next memory location. At the same time I checked the computer and noticed a new TIE Interceptor group, Delta. I targeted Delta 1 and assigned it to a memory location then turned my attention to the TIEs nearest the Shuttle. I concentrated on T/I Beta group as my highest immediate priority, determined to eliminate them before T/I Delta came in range.

Next, I brought up Delta 1 in the CMD and switched to torpedoes — I had three left — and fired as soon as I could lock on, one for each Interceptor. They avoided engaging me, going instead toward *Rescue 1*, so I was able to get good shots. If I had missed with any torpedoes, I would have had to redirect all my shield power to the engines and set the cannon recharge rate to one step above normal to get enough speed to catch up with them and still be able to keep firing.

As soon as these Interceptors were destroyed, the *Invincible* launched more of them. I turned toward the next wave, reset the shield recharge rate to normal, and began transferring cannon power to the shields until the shields were fully charged again. This time I had to engage the new wave of T/I Delta with lasers. Once again I redirected all shield energy to engines in order to keep up with them.

The good news was that once I eliminated this group, *Rescue 1* had completed its mission. I got the mission complete message once it had jumped to hyperspace. With the Shuttle gone, the Interceptors homed in on me, but I decided to stick around and shoot them up, even though the mission was over.

[redacted]

YOU CAN OUTFLY THIS GUY....

BUT CAN YOUR COMPUTER?

Yesterday's high speed games have pushed your Personal Computer to it's limits.
Today's games are breaking them.
You need a computer with no limits. *You need to fly a Falcon.*

The Falcon **MACH** series are the first personal computers designed especially with the serious gamer in mind. The **MACH** systems employ new VESA local bus technology with the fastest graphics ever made for gaming and business use. They can produce 45 VGA frames per second. 30 Frames per second is flicker free to the human eye. Serious hardware for serious players.

System	MACH 2	MACH 3	MACH 4
CPU Type	486/DX-33	486/DX-50	486/DX2-66
Motherboard	VESA Local Bus	VESA Local Bus	VESA Local Bus
DRAM Memory	4 Megabytes	8 Megabytes	16 Megabytes
Hard Drive	130 Megabyte	170 Megabyte	212 Megabyte
Landmark v.2 Speed	111 MHz	167 MHz	223 MHz
VGA Frames / Second	26	40	45
Price	$1,599	$1,999	$2,499

System Upgrade Options:

Internal CD-ROM	add $249
SoundBlaster Pro	add $199
CH Flightstick Joystick	add $ 39

All systems come standard with. Mini-tower case, 230 watt power supply, 1.2 and 1.44 floppy drives, Genoa 8500 VLB graphics card,101 Key keyboard, 14" .28dp SuperVGA monitors, 2S/1P/1G ports, & DOS 6 and are backed by our 1 year parts and labor warranty.

Any system can be custom built to your specifications, please call for pricing.

Sales: (800) 258-6778 **Information: (503) 269-0775** **Fax: (503) 267-2575**

FALCON - NORTHWEST

COMPUTER SYSTEMS

263 South Bayshore Drive
Coos Bay, OR 97420

Circle Reader Service #54

That's a Jai Alai!

by Pedro Alfonso Jimenez Xavier de la Mancha

All I had really wanted to do was find out about *The Dig*, Brian Moriarty's upcoming graphic adventure from LucasArts. So, when my source asked me to meet her in a famous Tijuana nightclub, I didn't hesitate. I even took a little overnight bag in case we ended up on the Yucatan Peninsula (what better place for an archaeological dig?) and hitched a ride to the border with the usual suspects.

Our idea was to drive the rental car to the border, walk through no man's land and catch a cab on the other side. The ride was almost as wild as the highway surfing sequence in LucasArt's *Sam & Max: Freelance Police On The Road* (the graphics adventure where our favorite detectives visit every weird amusement venue in Americana from the World's Greatest Ball of Twine to the dangerous Gator Golf course). In between lane changes that made a demolition derby look tame, a little magpie whispered in my ear that '93-'94 was going to be the era for cyberpunk. Not only are **ReadySoft**'s *CyberSpace* and **MicroProse**'s *Blood Net* in the works, but **Interplay** has hired the writer-director's assistant from the film *Jennifer 8* to produce an unnamed cyberpunk role-playing game. **Bullfrog/EA** is nearing completion of *Syndicate*, a strategy game in a dark future milieu, and **Cyberdreams** has convinced Harlan Ellison to contribute to a graphic adventure based on the award-winning short story "I Have No Mouth And I Must Scream."

We had parked the car and walked through the pedestrian gate when one of my gentle companions pulled me back and screamed. She had seen a rat cross her path and was ready to return to the good old U.S. of A. "Are you sure it was a rat?" I asked, "It could have been [former software executive's name withheld so that industry insiders can replace it with those who have burned them on one or more projects]!" My "sources" (technical term used by journalists in order to be reimbursed for travel and entertainment expenses) laughed and I shifted gears, "Maybe it was a wolverine?"

Only the Michigan alumna was offended and the U.S.C. graduate asked, "Oh, did it come from Sega? They're doing an X-Men game." It took me a second to realize she was talking about the most popular member of the comic book's band of mutants, the Wolverine. Then, I asked her which characters were going to be in the game. She told me that *X-Men*™ would feature Cyclops, Gambit, Nightcrawler and Wolverine on the side of justice and Magneto as the ultimate bad guy.

As soon as we crossed the border, we hailed one of the fabled Tijuana Taxis. Fortunately, one of my sources spoke fluent Spanish, as opposed to the broken half Ingles, half-Espanol I used when visiting TJ. She gave the cabbie the name of the club and he flipped a "U" in the middle of Avenida Revolucion. "Spun this sucker around faster than a hockey player who just lost the puck," I said.

"Then, I guess you know about *NHL Hockey*," said my source. "EA's finally going to put it on the IBM." I love it when she talks hockey. "The IBM version will even have a 'coach only' option and stat compiler to go with the expanded graphics and sounds they couldn't get into the Sega version."

The taxi pulled up in front of the night club, and it was blacker than a *Command HQ* square after it had been nuked. That's what I told my friends and the redhead asked if I knew about *Command HQ II* (working title). I admitted that I didn't and she said that the new version would eliminate the secret "doc scan" technique that lets players cheat on the ???? scenario, improve aircraft carriers, make it run under 2400 baud and *possibly*, add a scenario builder.

The club was closed, so we elected to visit the restaurant across the street. We would only have to wait a few minutes for our so called friends to show up and my "sources" thought they could loosen my tongue with a little mescal. Heck, I didn't figure there'd be any problem. I must drink about 64 ounces of coffee a day; what's this pansy discolored stuff gonna do to me? They poured and served me, poured and served. No problem! I even bit the head off the worm to show them what a man I was.

Two of my sources swooned, but one said I wouldn't be able to bite the head off one of the worms from *Dune II* on the Sega. Not only is the action supposed to be much faster on the console, but the figures and objects are four times larger than those on either the IBM or the new Amiga version. The good news is that the maps have more interesting and functional terrain features than those on the personal computers, but the bad news is that gamers won't be able to save their games.

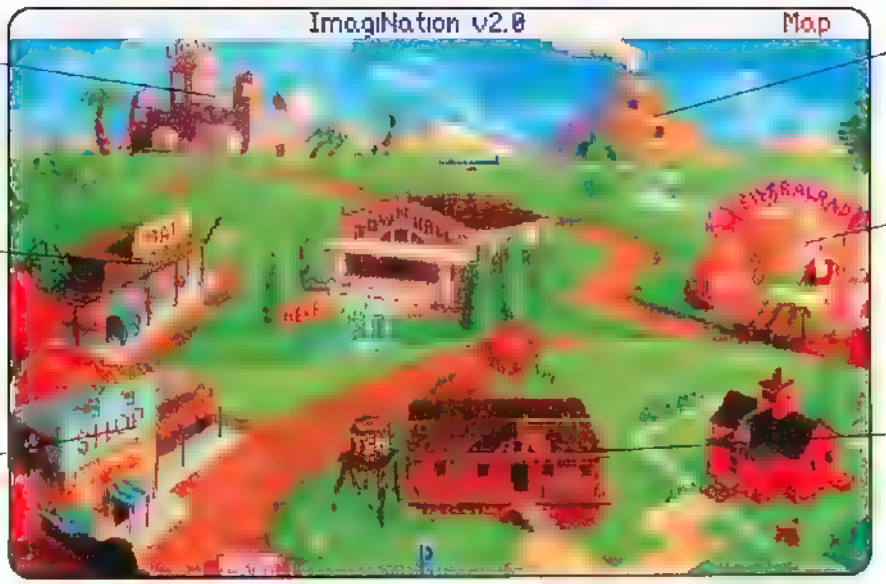
"Shure," I said (sort of), "but didja' know the nextsh game they do won't be on Arrakis? I think they're tired of drawin' all that shand."

"See," said the redhead, "didn't affect him at all." They all giggled at my expense and I stood up to show that I still could. I collapsed onto the table on my back. The last thing I remember was the little magpie saying that two submarine simulations should hit this fall. Remember the good old days when everyone was doing WWI flight simulations and trying to name their games *Red Baron*? Now, the battle is over *Seawolf*. The little bird said that the games will each take a very different approach on the subject, but it was funny that they opted for the same name.

Two of my sources picked me up and were ready to carry me out of the restaurant. By that time, I decided the farce had gone far enough. "Gee, you ladies are almost as strong as Zanthia, the main character in **Westwood**'s sequel to *Kyrandia*." Of course, they immediately dropped me onto the floor when they realized the slurred speech was gone. I figured it wouldn't take them long to realize that "mescal" bottle had been filled with watered-down *Squirt* and a gummy worm, either. So, I told them the sequel would have seven game chapters, lots of nifty new technological flourishes, plenty of comic relief and a love story.

I didn't quite get the whole message out before the blonde lifted up my bag enough to pour a cold Corona down my shirt. "You think you're so smart!" she sputtered, "tell me where *The Dig* takes place?" Even though I knew it had something to do with an asteroid, I decided this wasn't the time for "share and tell." CGW

Interaction, Relaxation, Competition, Cooperation, Recreation, Conversation, Education...



LarryLand™
Join Leisure Suit Larry and adults from all over in the world's first Cyberspace Casino.

Post Office
Receive E-mail in your own mailbox or send mail using SierraStamps.™

The Mall
Get the best prices on all kinds of stuff!

MedievaLand™
Team up with others to explore the dark caves within an active volcano.

SierraLand™
Dogfight other Aces in Red Baron,® splat 'em in PaintBall™ or just putt around in a game of Mini-Golf.

ClubHouse
A friendly place to play Bridge, Backgammon, Cribbage, Chess and other great games.

Destination? ImagiNation™!

For Your FREE Invitation To ImagiNation, Including 3 Hours Of On-Line Time Call: 1-800-SIERRA-1, Or Fill Out And Return The Coupon Below.

Now there's a whole new way to have fun with your personal computer. It's called *ImagiNation: The CyberSpace Theme Park*™ and it's only on The Sierra Network™

The Sierra Network is on-line games and more, including products for every taste and skill level. Games range from the multi-player version of the award-winning Red Baron® and the critically acclaimed fantasy game The Shadow of Yserbius,™ to more relaxing fare like Bridge and Chess. There's even multi-player games for children like Graffiti™ and Boogers.™ More than 20 great games so far – and more to come!

But what really makes The Sierra Network special is the sense of community that you get when you visit ImagiNation.™ Each night, thousands of friendly people gather there to play games, meet new friends, and generally have a good time together.

If you'd like to try The Sierra Network, all you need is a 386 or better computer, a VGA monitor, a 2400 baud modem, and a valid major credit card. Just send in the coupon, or give us a call. We'll give you everything you need to enter the land of ImagiNation, and your first 3 hours – FREE.*

ImagiNation on The Sierra Network. There's no place you've ever been that can compare to the fun and friendship of the world's first CyberSpace Theme Park.

The Sierra Network
PART OF THE SIERRA FAMILY

Valuable Coupon

For your **FREE** Trial Membership Kit and **3 FREE** hours of on-line time, just call: **1-800-SIERRA-1**, or fill out this coupon, place it in an envelope, and send it to: **The Sierra Network, Offer #320, P.O. BOX 11, Oakhurst, CA 93644**

☐ Yes, I have at least a 386 computer, a modem, and a valid major credit card. If I decide to use The Sierra Network after my 3 free trial hours are up, I will become a full member and be billed as little as $12.95 per month.*

Name _____

Address _____

City / State / ZIP _____

Day Phone _____ Evening Phone _____

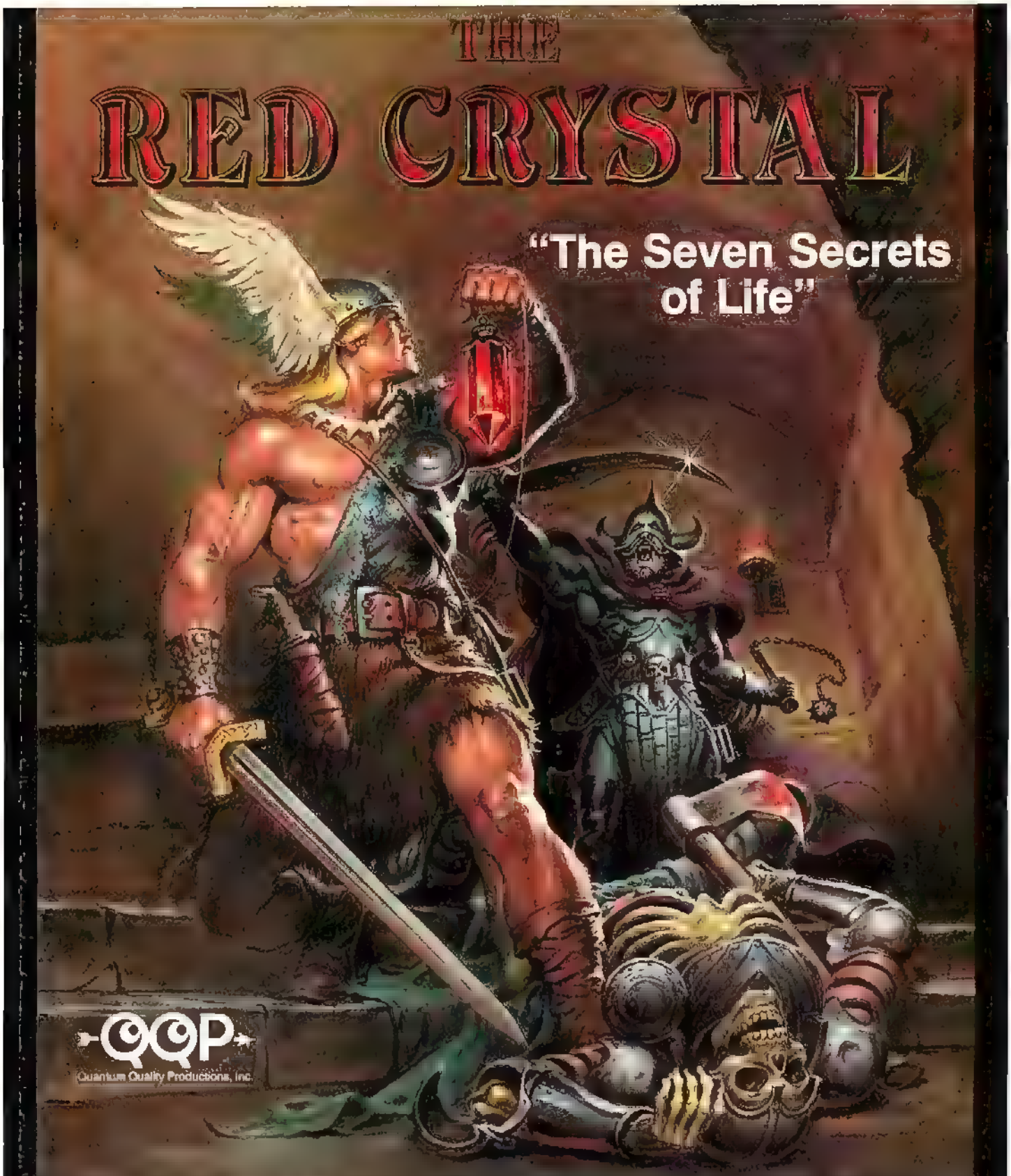
Card Number: _____ Expiration Date _____

Credit Card: ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover

* Subject to current rates, terms and conditions. See rate card in membership kit for details.
Offer good through December 31, 1993 ©1993 The Sierra Network Offer #320

* Your credit card will not be charged unless you use more than 3 hours of on-line time

TM designates a trademark of The Sierra Network Red Baron is a registered trademark of Dynamix Offer good until December 31, 1993 Offer available only to first time members ©1993 The Sierra Network Offer #320



Seek out the seven secrets of life . . . . Can you forge through the evil that lurks in the depths of the eerie dungeons, the ominous castle towers and the savage countryside? Play alone or with a partner. Simply, one fine adventure and role playing endeavor.

- MODEM PLAY
- 1 OR 2 PLAYERS WORKING TOGETHER OR IN HEAD TO HEAD COMPETITION
- BREATHTAKING GRAPHICS
- FASCINATING ECONOMIC SYSTEM
- LARGE VARIETY OF MONSTER TYPES
- OVER 50 DUNGEON LEVELS
- AUTO-MAPPING FEATURE

The "Red Crystal: Seven Secrets of Life" is for the IBM PC. It can be obtained through your favorite retailer or ordered directly by calling:

908-788-2799

1993© Q.Q.P. All rights reserved. IBM is a trademark of International Business Machines.

SOLITAIRE'S JOURNEY FOR WINDOWS

QQP
Quantum Quality Productions, Inc.

The greatest collection of solitaire games ever is now available under Windows. In addition to the 105 individual games there are tournaments, quests and cross country journeys for a lifetime of gaming entertainment. It's not just a game . . . it's an addiction!!

- NOW WINDOWS COMPATIBLE
- 105 SOLITAIRE GAMES (Most of the world's best)
- TOURNAMENT PLAY (Set tournaments or create your own)
- 4 INTRIGUING QUESTS
- SEVERAL CROSS-COUNTRY TOURING COMPETITIONS
- COMPLETE HISTORY AND OVERALL AVERAGES FOR EACH GAME

The "Solitaire's Journey for Windows" is for the IBM PC. It can be obtained through your favorite retailer or ordered directly by calling:

908-788-2799

1993® Q.Q.P. All rights reserved. IBM is a trademark of International Business Machines.

Dungeons & Dragons®
COMPUTER GAME

STRONGHOLD

THE POWER TO BUILD AND COMMAND YOUR OWN KINGDOM!

STRONGHOLD is the first kingdom simulator set in the DUNGEONS & DRAGONS game world. Battle computer-controlled adversaries to become Emperor by building and expanding a kingdom while dispatching all opposing forces.

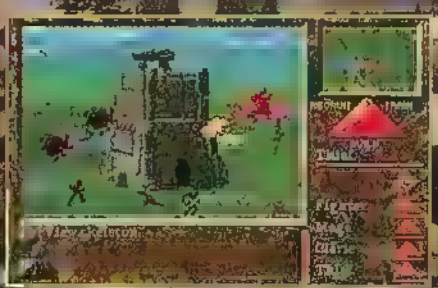
You'll deal with all the details of running your own domain. Construction, farmland, population, housing, taxes, troops, morale, changing seasonal conditions — as well as a multitude of D&D® game monsters.

Stronghold's striking visual presentation includes a ground-view camera angle that zooms in and out using 3-D scaling technology. Music and digitized sound effects enhance the fantasy mood. The intuitive interface makes this unique game fast and easy to play!

STRONGHOLD. Running a kingdom may not be easy — but it sure is fun!

IBM
(386 or greater)

TO ORDER
Visit your retailer or call 1-800-245-4525 (in USA & Canada) with VISA/MC.



SCREENS SHOWN: IBM 256-COLOR VGA

DUNGEONS & DRAGONS, D&D [illegible] by and used under license from TSR, Inc. ©1993 TS[illegible] Simulation

COMPUTER GAME DESIGN SECTION

Computer Game Design: Who, How and Why?

We have covered the entertainment software industry for more than a decade. Even so, it is still amazing to discover concepts we had failed to consider. For example, we know pretty well how graphic adventures move characters about the screen, but we never thought about the strategies required to redraw the background for each frame. Again, we know how much attention is paid to the physics behind the vehicles/vessels in a simulation, but until recently, we never thought about the physics algorithms for a blimp camera. So, computer game design is a dynamic field that always offers surprises.

This special section on computer game design has been produced to draw back the curtain a little so that readers can appreciate some of the personalities, philosophies and techniques which are taken into consideration when a design team starts work on a computer game. The opening article is the first half of our coverage of "The 7th International Computer Game Developers Conference." Then, Chris Lombardi takes us "Behind The Screens" to view the voice talent work for *Day of the Tentacle* (LucasArts' new *Maniac Mansion* sequel). Next, the "Abstracts from the *Journal of Computer Game Design*" will talk about redrawing backgrounds in adventure games and other design problems.

From the developers themselves, Vern Lewis tells us of the pleasures and perils of transforming videotaped images into computer game images, and Gordon Goble interviews Papyrus' Dave Kaemmer about next issue's cover feature, a hot new Indy car racing simulation from the developers of Electronic Arts' *Indianapolis 500: The Simulation*. After that, science fiction writer Martin Cirulis shares how he and Hugo/Nebula winner Lucius Sheperd have used *SimEarth* and *SimLife* to create worlds for novels and short stories. Finally, Mike "Moondawg" Weksler reviews a book that can help readers program their own flight simulators (or, at least, appreciate what other people have to go through in order to do so), The Waite Group's *Flights of Fantasy: Programming 3-D Video Games in C++*.

Here's hoping that our readers enjoy reading about designers, design ideas and game technology as we enjoy discovering how the games move from ideas to our computer screens. We think watching the making of the games is *almost* as exciting as playing them — at least from our vantage point. After all, we don't have to keep typing in those lines of code and hunting down elusive bugs. We only deal with the interesting parts, like the weird costumes game designers wear at the annual costume banquet.

Graduation Day for Computer Entertainment

The 7th International Computer Game Developers Conference

by the Computer Gaming World Staff

To some people, the financials of the computer gaming business make it too insignificant to pay attention to this fledgling industry. The same people might say that game designers, programmers, composers, producers and artists tend to live in a "Neverland" of their own making, a world of neat and cool hacks that are very hard to explain to most people. That may not be true for long, for reasons to be found both within and without the community of game developers. In many ways, this year's Computer Game Developers Conference seemed like a cross between high school graduation and homecoming.

Chris Crawford's "I Had A Dream" speech showed that he had rethought his design philosophy and game/life goals. Though his opening day address was a bittersweet analog to the idealistic aphorisms of valedictorian speeches, it was

Marc Blank (*Zork*), Steve Meretzky (*Leather Goddesses of Phobos*), Mike Berlyn (*Infidel*), Brian Moriarty (*Trinity*) and Dan Horn (former Director of the Microcomputer Engineering Group of **Infocom**) celebrate a reunion in front of another "dungeon."

tinged with an overarching sadness because the designer has opted to focus upon a narrow niche of interactive art lovers rather than continuing to reach as many gamers as possible. The conference seemed like homecoming as the principal founders and most famous designers of **Infocom** joined together to reminisce about the Cambridge Camelot where the Great Underground Empire was formed, and several clusters of designers looked like a return to the Pajaro Dunes (a resort where **Electronic Arts** used to have off-site meetings for planning and playing) days when Electronic Artists were going to be the royalty of the next entertainment industry.

From the time many of our public companies formed in the early '80s with vacuous but effective promises of making "stars" out of computer game designers, the design community has tried to be its own counterculture and counterpoint to the slick marketing departments that package their talent. Many ruined companies rest in the graveyard of computer game history because both sides of a commercial entertainment product were not properly integrated.

Now, Hollywood is moving in upon this pool of talent with a quick and sure step. This may imply several significant changes in the computer game industry (which are elaborated upon in this month's editorial), but it appears that most game developers have been at this type of nexus point before and, hopefully, are prepared to graduate into a world of better (and possibly more lucrative) possibilities.

With **Sony's** recent aquisition of **Psygnosis**, **Viacom's** acquisition of **ICOM**, and employees of **Walt Disney Software**, **LucasArts Games**, **Trimark Pictures** and **Paramount's** electronic publishing division attending the conference, it made a perverse kind of good sense to have automobile manufacturer proclaimed futurist Harlan Ellison, one of the "old ones" of science fiction whose name must be spoken with hushed and reverent tones and a screenwriter in his own right, to deliver the keynote address for the annual awards banquet. One would think, however, that a man as brilliant as we perceived Harlan Ellison to be would have bothered to learn something about his audience before he delivered his speech.

I Have No Message, But I Must Scream

Ellison has an anger schtick. He takes his ethnic weltschmerz (Jewish pessimism) and uses it as a club on his audiences. Without his anger and pessimism,

Speculative fiction writer Harlan Ellison greets computer game developers prior to the banquet.

Harlan Ellison would be as helpless upon the stage as Don Rickles without insults. The trouble is that Harlan was out of his element. He was talking to a group of people who want to change the world from its couch potato acceptance of the status quo as much as this literary guerrilla wants to change it.

Billing Harlan Ellison as a futurist is definitely a misnomer. He is actually a recalcitrant, a reactionary who bends revolutionary prose to his own ends. After admitting that he does his writing on a typewriter as outmoded as the one on which William Gibson punched out the technopoetry of *Neuromancer*, Ellison tried to make contact with his audience by admitting that his contribution to a computer game design based on the Hugo-winning "I Have No Mouth And I Must Scream" amounted to two full weeks of design work. We had to chuckle. At least, Bill Gibson had graduated to a word processor prior to the writing of *Mona Lisa Overdrive*, and Ellison was bragging about his contribution to a game in an industry where it sometimes takes two weeks to figure out the physics of a chase plane view or a blimp camera. Inside of two minutes, Ellison had proven that he didn't really understand technology or the challenges faced daily by his audience.

WORLD WAR II

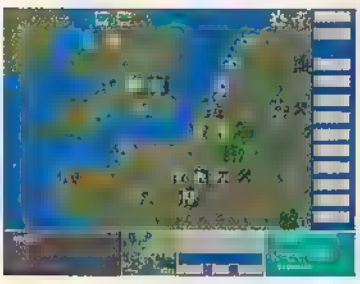
The war is about to begin. Soon, the German blitzkrieg will sweep across Poland and the rest of

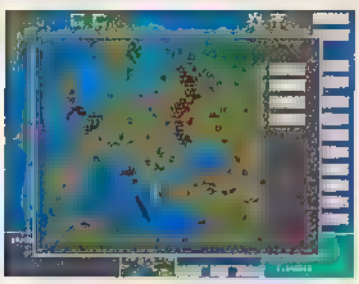
E U R O P E

Europe. Starting in 1939, CLASH OF STEEL spans the European Theater of World War II with one complete

1939–1945

campaign and six scenarios, including the Fall of France, Operations Barbarossa, Blau, Citadel and D-Day.





256 – color VGA displays

To order, visit your retailer or call 1-408-737-6800 x186 with VISA/MC (U.S and Canada only). For play on IBM

©1993 Strategic Simulations, Inc. All rights reserved

The major thesis of the address seemed to be that the assembled game designers need to do something besides create games. He extemporized on incidents from his life in the army, seeming particularly proud of the way he manipulated an officer into assigning special duty in order to compile a company history he had no intention of completing and how he had challenged a fellow non-comm to perpetrate fraud.

We aren't quite sure what he means. If he means to take the games which the assembled designers are already making and infuse them with enough human emotion to bridge gaps of interpersonal understanding, there are designers trying to accomplish this in many different ways (games with artificial personality, multiplayer cooperation and, most importantly, with story). We simply don't understand why their contribution is any less significant than Mr. Ellison's contributions to society.

If he objects to the violence which is so pervasive in both video and computer games, he had best revisit the anarchic and glorious celebration of violence in his own work. Violence is both an easy way to express conflict and resolution in any artform. It can also be powerful. That is why we advocate a more careful use of violence in certain games, but do not editorialize against violence per se.

Harlan Ellison says that the computer game design community should quit playing games with their lives. We think Ellison should stop playing games with his audiences. It's time to put away his "Bad Melville" impression and use his podium as a "futurist" to challenge his audiences instead of settling for cheap laughs and letting them miss the message.

Spotlight On Exceptional Games

Though Ellison provided the keynote address on banquet night, the bulk of the evening was devoted to honoring exceptional computer games. These games were nominated from within the developer community itself and each nomination was accompanied by comments from those who nominated the games. The order of honored products was determined by the presenters and had no bearing on the relative merits of each game. Every game nominated was considered to be equally worthy. As each game was introduced, the members of the development teams were given pins recognizing their distinctive contributions to the games and making them the equivalent of the "honor society" for the "Class of '93."

Everyone attending the banquet has probably been called a "nerd" at one time or another, but this vandalized sign embraced "nerditude."

The first game nominated was *Putt Putt Joins The Parade* from **Humongous Productions**. One nominator said, "It reminded me of my favorite book when I was a kid, but it was alive." Another said, "My second youngest was fighting for the chance to play and he's only three." Frankly, the designers loved the easy interface, the cute animation, the great sound effects and its vocal caricatures, but the most important thing about the game was that it gives the player a purpose. It is the kind of game where a child can be a participant, not a tourist.

Putt Putt Joins The Parade was designed by **Shelley Day** and **Ron Gilbert**.

The second game honored was, as master and mistress of ceremonies Tim Brengle and Nicky Robinson observed, nominated in spite of — or maybe *because* of — its graphic violence. **Id Software**'s *Wolfenstein 3D* features fast, smooth, low-resolution texture-mapped graphics that not only give motion sickness to most players, but put shareware back on the map, *almost* singlehandedly.

Wolfenstein 3D was developed by **John Carmack**, **John Romero**, **Adrian Carmack** and **Tom Hall**.

Next, the assembled community recognized *Comanche. Maximum Overkill* from **Novalogic**. Kudos ranged from the game providing a flight simulation that is both fun and easy-to-learn to the fact that it has the best fractal generated terrain that anyone had yet seen.

Comanche: Maximum Overkill was developed by **Kyle Freeman** and **John Garcia**.

In keeping with the trend of honoring fast-scrolling three-dimensional games with awesome graphics, the community also honored **Origin**'s *Ultima Underworld*. One nominating designer stated, "My girlfriend won't play it because it's too realistic and scary," and another said, "I don't think you can get any closer to VR without a helmet."

Ultima Underworld was developed by **Paul Neurath** and the crew of **Looking Glass Technologies**.

Next, **Velocity**'s *Spectre* was brought to the attention of the assembled throng. *Spectre* was clearly recognized for its capacity to challenge gamers with *real* rather than *artificial* opponents. It was honored for its entertainment value as the presenters considered its service as a productivity destroyer. It was also cited as proof that the Macintosh really can do fast polygon-filled games.

Spectre was designed by **Steve Newman**, **Sam Schillace** and **Craig Fryar**.

Proving that there is still room for genuine innovation, the conference's next honor went to **Dynamix**' *The Incredible Machine*. Designed and developed by Jeff Tunnell Productions, the product combines something of the best aspects of *Sim City* and *Lemmings*. One programmer/artist even said that this was the game she always wanted to do and, in contrast to what rival designers usually feel about another's work, she felt they had done it right. Another commentator observed that they've stuffed Rube Goldberg into the player's computer with this game. The presenters even claimed that the satisfying play experience could not be described, only experienced.

The Incredible Machine was developed by **Jeff Tunnell**, **Kevin Ryan**, and **Brian Hahn**.

Speaking of innovation making it difficult to describe a product, the developers didn't know whether to call *Stunt Island* (from **Walt Disney Software**) a flight simulation or a film editing simulator. Those who nominated the product observed that *Stunt Island* provided a satisfying experience from placing the cameras to flying the aircraft. Most importantly, they observed that it was probably the first time someone would really *want* to see a saved game (i.e. film).

Stunt Island was developed by **Adrian Stephens**, **Ronald J. Fortier**, **Cary Hara**, and **Martin Day**.

LucasArts' *Indiana Jones and the Fate of Atlantis* was the next honoree. Although its multiple paths proved an inefficient way to make Indy "three games in one," the designers commended Hal Barwood and company because all three paths actually work. Some nominated the game because of unique sections where one builds their own interface, and others appreciated the way this game focused on story and characters over puzzles.

Indiana Jones and the Fate of Atlantis was designed by **Hal Barwood** and **Noah Falstein**.

Observing that it is rare when the remake is better than the original, the final game to be honored was **Accolade**'s *Star Control 2*. Developers stated that it is a perfect blend of action and adventure that

We don't know from friendly skies.

You've beat all the flight sims? A furball doesn't raise a sweat anymore? Ten minutes of WWI combat isn't even challenging?

Hmm...

Maybe you *are* ready for Air Warrior®.

That is, if you think you can handle the most realistic combat flying there is. Because Air Warrior does more than correctly model 28 different WWII aircraft, complete with spins, stalls and buffeting.

It puts you up against other human beings. Online, in real time, for as long as you care to play.

That's why Air Warrior attracts the aces. So if you're just looking to do a friendly loop-the-loop, look elsewhere. If you're interested in a career, sign on to Air Warrior – only on GEnie®.

Sign up now:

1. Set communication software for 8|N or 7|E half duplex (local echo) at 300, 1200 or 2400 baud. **2.** Dial toll free: 1-800-638-8369. Immediately upon connection, enter HHH **3.** At the U#= prompt, enter XTX99223,AIRCRAFT then press RETURN **4.** Have a major credit card ready. In the U.S., you may use your checking account number. (There is a $2 monthly fee for all checking accounts.) For more information in the U.S. or Canada, call 1-800-638-9636.

Air Warrior® on GEnie® multi-player games

100% Organic Opponents.

Air Warrior is a registered trademark of Kesmai Corporation. GEnie is a registered trademark of General Electric Company. Graphic interface required and available for selected machines.

KESMAI corporation

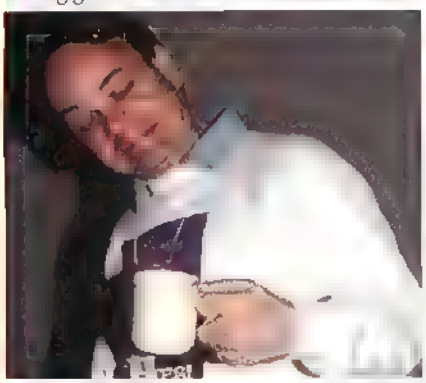
Circle Reader Service #104

becomes more than sum of its parts. Ultimately, they called it an action game for people who read with sound that is exceptional enough to make gamers think they've upgraded their sound boards.

Star Control 2 was developed by Paul Reiche III and Fred Ford.

How I Almost Screwed Up Civilization

In total contrast to the angry approach of Ellison was the affable talk of Sid Meier. Sid's lecture centered upon the ways that he could have ruined his best-selling game, *Sid Meier's Civilization*. Not



Sid Meier (*Sid Meier's Civilization* demonstrates the amount of caffeine necessary to lecture on the morning after the banquet.

only did it take considerably longer than two weeks for Sid to create "Civilization," but it required considerable thought at key junctures of the project.

First, *Sid Meier's Civilization* had a textbook feel. Meier had actually begun to build a game around the "heavy" subject of human civilization prior to his work on *Sid Meier's Railroad Tycoon*, but the work bogged down because it wasn't "fun." Later, after RRT was completed, he came back to the game, focused on the entertaining elements of the game, and ended up completely it quickly once it started coming together.

Second, Meier admitted that he originally wanted to write a "detailed computer model" to handle the sociological, economic, ecological and political forces that forged civilizations. He emphasized the fact that there are only two kinds of computer games: ones where the player knows what's going on and those where the player does not. In the latter category, there are games where the designer has all the fun (games that are usually not detailed enough to communicate the research to the gamer) and games where the computer has all the fun (featuring plenty of algorithms, but not process intensive enough to allow the gamer to really get into the action). Meier prefers games where the player has all the fun (where all the vital information is presented and the gamer has the ability to make meaningful decisions). Hence, *Civilization* ended up with phased turns, lots of reports and lots of things for the player to do.

Third, *Sid Meier's Civilization* almost simulated the rise and fall of civilizations. If there is one thing clear in history, it is that there is an episodic cycle to the great civilizations. Sid opted not to go for the rise and fall theme because it would have been too discouraging to the player for the game to regularly and arbitrarily destroy the civilization he/she has painstakingly built up over the course of dozens of hours. Though it would have made the game conform to history, it would have forced the game into the dustbins of history to have imposed such a "no win" design feature.

Fourth, the designer with the most games in the *CGW* Hall of Fame admitted that he almost ripped off another Hall of Fame game, *Empire*. Then, he asserted that, in addition to the ethical question, it is far better to look for new elements in game design than to simply cannibalize older games.

Fifth, Meier stated that he almost made the world too big. A big world sounded very good at first, because it intimated more gameplay. Instead, Meier said that it made winning the game too repetitive and not necessarily fun.

Sixth, he stated that he almost let the computer do too much management of the player's cities. Instead, Meier insisted that designers need to give the players plenty of things to do. If said designer believes the activities constitute too much for the player to do, he/she can also provide a default that lets the computer manage items by using the same artificial intelligence routines that one must design for the computer opponent(s). "One reason I continue to program my own games," commented the designer, "is to be aware of opportunities to find new uses for modules within existing code."

Seventh, Sid confessed that he almost made the game too civilized. After all, the name of the game was *Civilization*. Yet, he insists, "The game isn't really about being civilized. The competition is what makes the game fun and the players play their best." So, he admits that, "At times, you have to make the player uncomfortable for the good of the player." So, Civ became a wargame where building civilization is almost, but not quite, incidental.

Eighth, *Sid Meier's Civilization* almost used multi-player alliances. Sid even admitted to writing a lot of code to handle those alliances. Yet, he found that he couldn't play balance the game with those alliances because the computer could exploit alliances almost as good as the player and this would leave gamers with a sense that they couldn't win because the computer was cheating.

Ninth, he admitted to almost adding jets, helicopters and airborne units. However, he insisted that if one provides for new technologies close to the end of the game that it will frustrate the gamer by making them ask "What's the use?" whenever given an opportunity to build such technology. The abstracting of later technologies was a deliberate attempt to moderate the endgame. Meier observed that lots of people felt the ending was arbitrary, but he explained that it was designed intentionally to leave the gamer wanting more.

Tenth, he confessed that he almost put minefields and minesweepers into the game. The idea was to give the gamer enough tools to build a solid defensive perimeter. Unfortunately, Sid told us that the minefields caused the AI to do "stupid things." Then, he advised designers, "If you've got a feature that makes the AI look stupid, take it out. It's more important not to have stupid AI than to have good AI."

Eleventh, Meier told the assembled designers that he almost included a multi-player modem option in the game. Then, he opted not to do so for several reasons. First, he wanted the game to be turn-based instead of real-time so that the gamer could control the pace. Turn-based games do not work well in modem play (because of dead time). Second, he doesn't believe that the community of multi-player gamers is that large. As he stated, "My feeling is, if you had friends, you wouldn't need to play computer games."

Twelfth, he said that he almost made the game politically incorrect, just for laughs. Finally, he admitted that, "I almost put a big animated title sequence, digitized speech, and Super VGA graphics in the game. Well, actually I didn't, but I wanted to point out the trade-off." Sid concluded his lecture by asserting that game play was more important than any single feature.

In the question and answer period, Meier explained that he still does all his own programming and continually updates playable, expanding versions of the games he is working on. This enables lots of mid-stream adjustments, as it subjects the work in progress to constant evaluation. Sid admitted that doing his own programming allowed him to experiment with features and approaches because he wasn't imposing on anyone's time but his own. "To me, programming is almost a nuisance. It's a means to an end."

(See Part II Next Issue) cgw

Beyond fantasy. Beyond legends.

If you've been looking for the mother of all fantasy role-playing games, we know where you can find it.

Online, in GemStone III™.

This is no kill-the-dragon-thank-you-very-much computer game. And it goes far beyond any of the other so-called legends in the online arena.

Here in GemStone III, you're joining real people, in real time for your online quests. Some of the best role players and game masters in the country – all meeting together in a vast and constantly evolving world, rich with fascinating characters and demanding adventures. It's a place you can play forever.

GemStone III makes every other fantasy game history. And your friends are already here. So sign onto GEnie® today, and welcome home to GemStone III.

Sign up now:

Set communication software for 81N or 71E half duplex (local echo) at 300, 1200 or 2400 baud. 2. Dial toll free: 1-800-638-8369. Immediately upon connection, enter HHH

At the U#= prompt, enter XTX99224, FANTASY then press RETURN 4. Have a major credit card ready. In the U.S., you may use your checking account number. (There is a $2 monthly fee for all checking accounts.) For more information in the U.S. or Canada, call 1-800-638-9636.

GemStone III™: Shadow World® on GEnie® multi-player games

100% Organic Opponents.

GemStone III is a trademark of Simutronics Corp.
Shadow World is a registered trademark of Iron Crown Enterprises, Inc.
GEnie is a registered trademark of General Electric Company
Optional graphic front-end program available for IBM PC only.

SIMUTRONICS

Circle Reader Service #103

Memories of The Class of '93

Loquacious editor Johnny Wilson is interviewed by Molly McCrae (KPIX-TV) for special segment on violence in computer/video games.

Game developers offer nutritional guidance for prospective computer game designers.

Developers gather around the "want ads" in the CGDC recruitment center.

Steve Peterson in a pose that seems suspiciously natural to those of us waiting for *Champions*.

George Alistair "Fat Man" Sanger leads a session in his Porter Waggoner suit.

Just like school - some classes were closed by the time we reached them Board member Susan Lee Merrow (**Broderbund Software**) hams it up as she turns *Kids & Computers* editor Peter Scisco away from an overflowing session.

Trimark's Kelly Flock and EA's Rich Hillemann reminisce about the way things were before they were executives.

Former computer game magazine editors Rusel DeMaria (*PC Games*) and Margot Tommervik (*Softalk* and *Softline*) share the "off the record" stuff they never got to publish in their magazines

Will Wright demonstrates a unique programmer hack for tying one's shoes.

Close encounters nightly.

For the cold reaches of space, there's an awful lot of chummy people here.

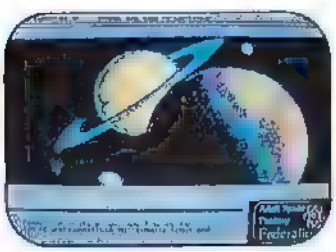
That's because Federation II isn't one of those shoot-the-ship computer games. This is a universe full of people. Real people, online, working with other real people in real time: busily building their fortunes, planets...nay, empires. And they'd love to throw some work your way so you can do the same.

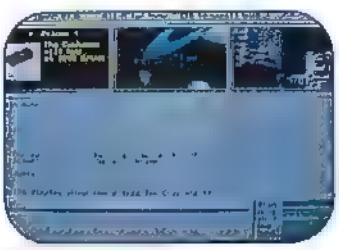
Of course, there's a lot of bargaining, buying and bulling that goes into it. We're social creatures, after all.

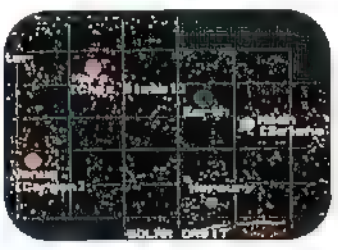
But if you're one of those special individuals who understands that creating an empire is ever so much more interesting than destroying aliens, maybe you *can* thrive in our space.

There's only one way to find out. Sign up and meet us in Federation II – available only on GEnie®.

Sign up now:
1. Set communication software for 81N or 71E half duplex (local echo) at 300, 1200 or 2400 baud. 2. Dial toll free: 1-800-638 8369. Immediately upon connection, enter HHH 3. At the U#=prompt,enter XTX99225, NIGHTLY then press RETURN 4. Have a major credit card ready. In the U.S., you may use your checking account number. (There is a $2 monthly fee for all checking accounts.) For more information in the U.S. or Canada, call 1-800-638-9636.







Federation II
on
GEnie®
multi-player games

100% Organic Opponents.

GEnie is a registered trademark of General Electric Company

Circle Reader Service #59

You build it.

You race it.

You pay your own speeding tickets.

Use animated 3-D instructions to build one of four model racers: Porsche 911, Bugatti EB110, Nazca M12 & Lamborghini LP500S. Try to outrun the cops as you race the clock to one of the four toughest tracks in Europe. Outduel other drivers as you race to the championship. Integrated video clips help you choose transmission, tires, spoiler settings and fuel. Available for MS DOS on CD-ROM.

THE MODEL MAKES THE GAME BETTER, THE GAME MAKES THE MODEL BETTER.

Circle Reader Service #86

Revell
POWER
MODELER
EUROPEAN
RACERS
Revell
{ ACTUAL VIDEO FROM GAME }

Lights, Camera, Interaction

Behind the Screens with LucasArts' *Day of the Tentacle*

by the CGW staff

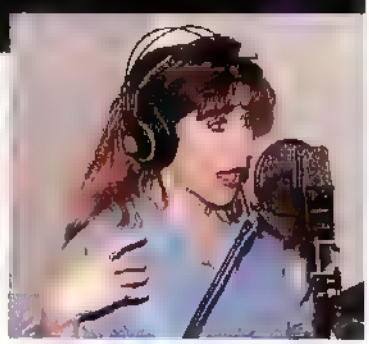
Although computer game producers don't yet call acting talents and ask to "do lunch," it is true that the "old" Hollywood is quickly infiltrating the "New Hollywood" of computer game development. As the linear technology of the former and the interactive technology of the latter converge in new technologies and techniques, it is interesting to view the work of talented and flexible people who can work effectively with one foot in both technological realms.

We had such an experience at Hollywood's Studio 222, the sight of the voice-acting taping of *Day of the Tentacle*, LucasArts' next adventure game. This wacky sequel to *Maniac Mansion* involves the trials of three teenagers who bop about space-time to undo the plans of a mutant appendage. It will be the first game in which the CD-ROM version and the disk version will be released concurrently. It will also be the first adventure game to offer spoken parts for nearly every action and response in the game, making it computer gamings' first full "talkie." All of the story dialogue and the majority of action responses—the "You can't do thats" and "What a ridiculous thing to do" responses—will be spoken aloud to its players. All told, there are 4500 spoken lines in the game—a monstrous design, production and acting task.

Associate Producer, Tamlynn Barra, gives directions to the actors from the sound production booth.

Riding the fence between Hollywood and Silicon Valley is Associate Producer, Tamlynn Barra. This twenty-something producer got her start in stage and video production, and began with LucasArts Games in 1990. She directed the voice-acting and produced the "talkie" portions for the CD version of *Indiana Jones and the Fate of Atlantis* and is now overseeing the mammoth *Tentacle* project.

Voice acting for computer games creates new problems that actors and directors rarely have to face. For one, the actors are taped one at a time, though the storyline often calls for dialogue between characters. In a typical situation, the actors in dialogue are together and can "act off of" one another. In the computer game situation the actors only have a script to play off of. As Barra says, "getting the actors into character is very difficult…half the studio is spent cueing up the actor for the scene."



Organization is a key issue. With 4500 lines of branching dialogue, the producer must keep the track of where the actors are in the game, and what sort of reading is required for the line. Barra has to keep the entire structure of the game in mind while the actor reads, so she can correct the actors' interpretations or ask for different inflections where needed.

The actors were cast from a group of known voice talent. The biggest name on the bill is Richard Sanders, probably best known for his character Les Nessman from the TV sit-com *WKRP in Cincinnati*. With his experience playing Les Nessman, Sanders is a natural for the role of nerdy, bow tie-bearing Bernard in *Day of the Tentacle*. Sanders noted (with tongue in cheek) that playing Bernard in *Day of the Tentacle* was a bit of a stretch for him, since he usually plays more manly sorts of roles. More seriously, he admitted that computer game acting was a challenge, since the actor is recording his lines out of context. The problem was overcome by Barra's directing efforts. She created the context for Sanders verbally and walked him through portions of the game so that he would know how his character should react.

A scene from Tentacle in which Bernard (Richard Sanders) and an Irish maid (played by Jane Jacobs pictured above) exchange barbs

From what we've heard, all of this hard work and talent will produce one of the best sounding computer game "talkies" yet. With its Chuck Jones style animation and the wit of the LucasArts adventure game team, *Day of the Tentacle* may also be one of the best playing. Who knows, maybe "Let's do lunch" isn't that far away? CGW

Bad Day in Bagdad!

You've been cast out of the palace as a beggar. The princess has turned against you. The palace guards want your head on a skewer. And you haven't even had breakfast yet. This is not good. It gets worse. One minute you're fleeing for your very life across roof tops. The next, you find yourself washed up on a desert island...or amidst ancient ruins, face to face with a disembodied head (and boy is it hungry!). This is *really* not good. You stumble upon quicksand, serpents, spikes, magic spells, a skeleton with a sick sense of humor, and then...well...things get just a mite tricky. Introducing *Prince of Persia 2®: The Shadow & the Flame™.* Some call it a dozen Arabian Nights movies rolled into one. Actually, it's your worst Arabian nightmare. So get some sleep. Once this swashbuckler begins, you may never sleep again.

Broderbund®

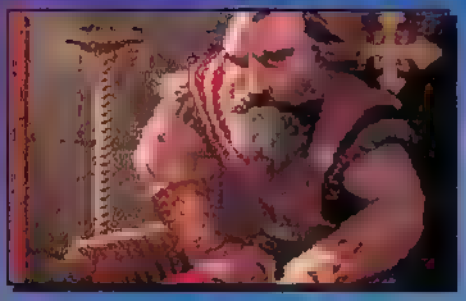
PULSE-QUICKENING ACTION • RICH MOVIE-LIKE STORY AND SOUNDTRACK • INCREDIBLY REALISTIC ANIMATION

A CINEMATIC ACTION GAME BY JORDAN MECHNER • SUGGESTED RETAIL PRICE $69.95 (MS-DOS VERSION). SEE YOUR LOCAL DEALER OR CALL 1-800-521-6263 AND REFER TO CODE 262 TO ORDER AT A 25% SAVINGS. • REQUIRES 10 MHZ 286 OR FASTER MACHINE. HARD DRIVE AND VGA REQUIRED

©1993 Broderbund Software, Inc. Prince of Persia is a registered trademark and The Shadow & the Flame is a trademark of Broderbund Software. All rights reserved.

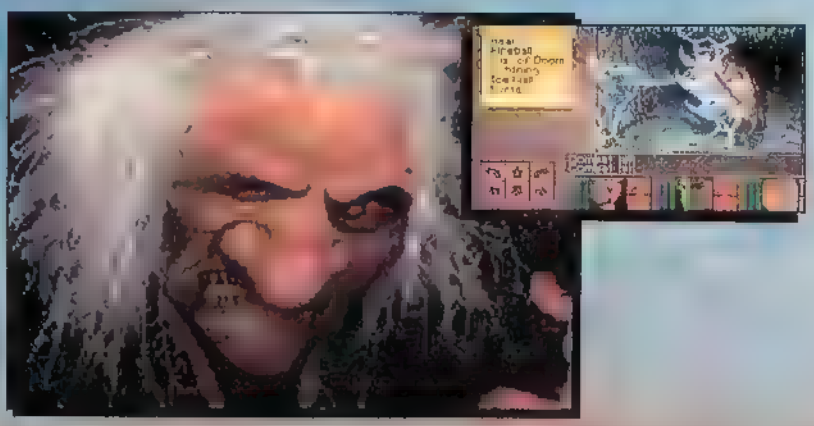
LANDS OF LORE™

THE THRONE OF CHAOS



The Dark Army encroaches. King Richard falls. And Scotia beckons you, laughing...

In her mad quest for power, Scotia has ravaged the kingdom. She seeks the throne, yet it eludes her. She's getting desperate. She's getting mean.



CAN YOU STOP HER? DO YOU DARE?

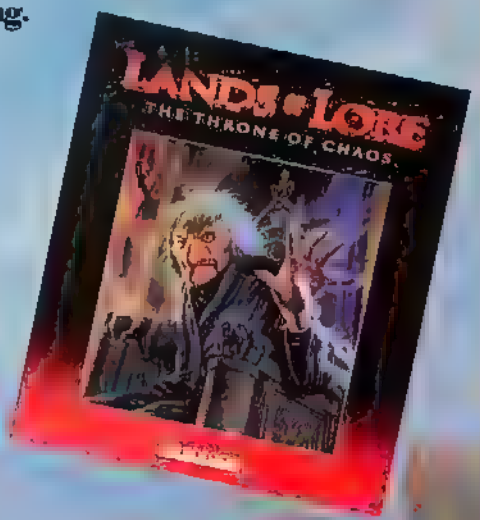
FEATURING

❧ **Compass and Automapper Included** - Adventure through ancient keeps and living forests. Unearth hidden ruins and haunted caves.

❧ **Make Friends and Influence People** - Cooperate with the helpful, sidestep the treacherous and destroy the dangerous.

❧ **Indulge in a Land of Sensory Delights** - Over 20 megabytes of compressed art and special effects. Actually hear the clash of steel! Feel the blows of terrors who slip beneath your guard!

❧ **Quick and Easy Combat and Spell Casting.**



AN INSPIRED FANTASY RPG EXPERIENCE FROM THE DEVELOPMENT TEAM THAT CREATED EYE OF THE BEHOLDER™ I AND II.

Westwood™ STUDIOS

Distributed Exclusively by

Virgin GAMES

Available for your IBM PC.

Eye of the Beholder I and II are trademarks of TSR, Inc.
The Eye of the Beholder games, TSR, Inc. and SSI are not connected or related in any way to the Lands of Lore game, Virgin Games, Inc. or Westwood Studios, Inc.
Lands of Lore is a trademark of Westwood Studios, Inc. © 1993 Westwood Studios, Inc. All rights reserved. Virgin is a registered trademark of Virgin Enterprises, Ltd.

Abstracts from the *Journal of Computer Game Design*

Our game design issues regularly feature notes which we have cribbed ... er ... researched and compiled from The Journal of Computer Game Design. This issue abstracts from issues 6.2, 6.3 and 6.4 of the journal. The summaries printed here are not meant to detract from the full articles within the journal, but as an attempt to let readers know what is available. The Journal of Computer Game Design *is published six times per year, and the subscription rate is $36 ($50 outside of North America) To subscribe, write to The Journal of Computer Game Design, 5251 Sierra Road, San Jose, CA 95132.*

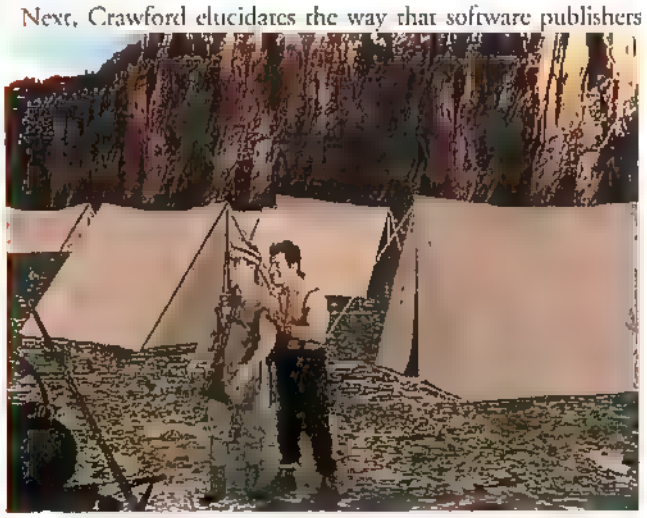
Audience Engineering (Chris Crawford, *The Global Dilemma: Guns or Butter?*)

Crawford's thesis in this article is that the customer does not really know what he/she wants in a computer game. Therefore, the designer reasons, the entertainment software industry ought to be able to both attract customers to and divert them from computer games.

His initial point is that information, even entertaining information packaged in a computer game, is a different kind of commodity than any other. Whereas people will buy the same model car, eat the same sandwiches, and wear the same clothes over and over again, they won't buy the same game. As Crawford states, "To be in any way valuable, information must be different from what the customer already owns. You can't sell anybody a second copy of any piece of information. You've got to offer them something new and different."

Naturally, he observes that customers do purchase sequels. Yet, he also points out that a sequel offers something familiar with new content. After outlining a traditional James Bond plot, he notes that the question remains how wild and crazy the ultimate bad guy will be and exactly how Bond will save the day. Hence, even in the context of the familiar, sequels are selling new and different information.

Next, Crawford elucidates the way that software publishers currently attempt to attract their audiences. He contends that they simply use terms that are a matter of degree (faster, fresher, bigger, etc.). He also observes that this hasn't changed since the early Atari marketing in 1980. Indeed, he suggests that most of the industry is unsure about a product unless it is a sequel to a successful product or uses a sensational new technology.



Scene from Return to Zork

Next, he challenges the design community to move away from developing games by reading registration cards and taking surveys. Instead, he advocates creating products that appeal to a particular constituency, the use of audience engineering in order to develop audiences which are more responsive and products which accomplish more.

How to Write Interactive Characters and Dialogue (Michele Em, *Return to Zork*)

Em comes to this industry from work at a special effects shop (as an artist) and as a screenwriter. Her article underscores the difficulty of writing interactive dialogue. Since players love to play "What if?" she asserts that the writer must continually visualize consequences and payoffs for more than one statement/action within a given situation.

Live action actor in Return to Zork

"For me," says Em, "interactivity in dialogue, in a game setting, means multiple choices of direction, multiple possibilities for information to be delivered, and a myriad of ways to amuse the game player." Dialogue has the responsibility of making the characters in a game seem credible. Em suggests that players should be able to recognize a character by the way its dialogue flows, whether it is presented in text or digitized speech from an actor. Hence, writers must get inside their characters and know their motivations and backgrounds enough to make the speech flow in a natural way.

For games, Em tries to get each slice of dialogue into 60 character spaces. To do so, she naturally slices out as many multisyllabic words as possible. They usually sound stilted in dialogue and two or more has the added disadvantage of turning

Ambush AT SORINOR™

Strategic Ambush Simulation from the Makers of *Siege!*

Sonnor's forests are dark and gloomy and full of dangers. But you took Clan Sernevan's money, and it's up to you to protect their princess on her journey. You peer over the shoulder of a wary swordsman into a clearing. As you're deciding whether it's safe to enter, you hear a branch snap on the trail behind! Orcs flood into the clearing! Boulders fly from the trees! ***Ambush at Sorinor!***

- Play a mercenary captain in a world of intrigue!
- Accept missions galore from the six Clan chiefs to make money—and enemies!
- Command dozens of troop types hiding invisibly or charging in the open!
- Beware of traps, and set your own!
- Design your own missions and create your own maps!

MINDCRAFT

22941 205th Street, Suite 201, Torrance, CA 90501

Actual IBM VGA screen photos

Circle Reader Service #73

an ordinary line into a tongue twister. Then, she reminds would-be writers that the dialogue must be kept short so that the gamers can get on with the game.

For games like *Return to Zork* where actors are going to perform the lines, she observes that she keeps all of the character's dialogue together and lists the variations and reactions in logical order. Hence, the actor performs the dialogue all at once and the editing and mixing can take place at a later time.

This process enables her to do another task that she considers important, check the dialogue flow. She reads the sentences aloud in all possible combinations in order to see how they work. This is when one often has to cut out the lines that do not work. Em also encourages writers/designers to pen their dialogue sequences with programming requirements in mind. IF/THEN, GOTO and DEFAULT TO are ways to schematize the dialogue hierarchies in the writer's mind.

Finally, she stresses the need to give each character a personal motive and a point of view. She even encourages writers to give each character a history, even if it isn't going to be expounded upon within the game. This will infuse the characters with a sense of reality that simply cannot be beaten.

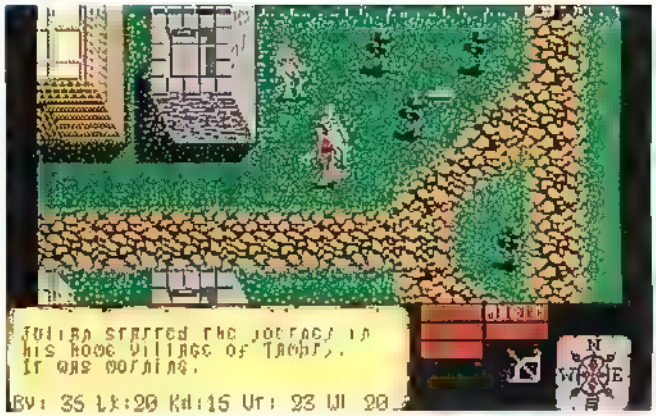
Software Sprites: A Tutorial and Some Tricks (David Joiner, *The Faery Tale Adventure*)

Joiner lists several techniques for handling animation. Particularly interesting is his analysis of handling backgrounds as the animated character moves across the screen. He suggests several solutions to handling the background so that it can be re-used for the next frame of animation.

- Keep a separate copy of the background. The copy of the background is copied over the visible background. This is somewhat expensive in terms of memory and is generally unworkable in the case of scrolling backgrounds.
- Regenerate the entire background every frame. Joiner says this is only possible if the background is created algorithmically or is tile-based. He warns that it is the slowest solution.
- Regenerate only the parts of the screen that were damaged. He suggests using a "damage array" would track what portions of the screen were overwritten by the figures. Joiner observes that this isn't too tough with tiles, since the coarseness of the array can be set to the size of the tile, but can get very complicated with multi-planar backgrounds.
- Save the background behind the figures and restore when done. This requires keeping an off-screen region just large enough to hold the background that the character can cover in a frame. Then, before drawing the character in a new position, the backsaved region can be restored (erasing the old character). Of course, this becomes more complex when there are lots of characters on the screen. Finally, Joiner suggests that programmers who use this technique should save, draw and restore in three separate passes to avoid drawing backgrounds that have portions of other characters.

Diskette Entertainment Software Distribution (Gordon Walton, *Harpoon*)

Walton provides a cautionary tale for developers who seek to establish their own distribution at retail. He starts the article by showing what the software publisher actually gets for a computer game (if they're lucky). For example, he notes that the average discount to the retailer/distributor is 60% off the suggested retail price. This allows for wide variation in "street price."



Faery Tale Adventure

Walton also points out how tough it is to get product onto the shelves and keep it on the shelves. He gives a six-step strategy to accomplish this task.

- Make entertainment products with broad appeal (or gear your budget to targeting a safe, proven niche).
- Know your audience better than the competition (to prevent returns).
- Find a publishing partner who has sufficient distribution and market clout to get your product on the market shelves. Developers should make sure that they ask the publishing partner the specific outlets where their products are sold and not accept "everywhere" as an answer.
- Make sure that adequate resources are devoted to marketing your product at your publisher, especially MDF (Marketing Development Funds). Print ads create mindshare; MDF creates shelf space.
- Promote your own product vigorously. Helping to create momentum is vital (on-line, print press and personal tours of retail stores)
- Aggressively fix any problems and listen to customer feedback.

Invasion of the Expositorions (Chris Crawford, *Balance of Power*)

Crawford could not be timelier with one observation. He notes that the expositorions (i.e. Hollywood-types) are coming into the industry and contends that this represents a problem (see Editorial, page 162). The problem is that these so-called expositorions (novelists, directors, producers and screenwriters) do not understand interactivity and think that it is a facet of the entertainment industry that can simply be added onto what they already have.

Crawford rightly observes that "Interactivity isn't some minor twist that we apply to the primary media of sound and image. It's the very essence of the medium. Sound and image support interactivity." As he sees it, the expositorions believe that they will be able to create the same old expository presentations that they have always made, but make it play on a computer.

Crawford states that the expositorions are ignorant of the idea of interactivity, but wisely observes that their large corporate bucks and fresh ideas will more than compensate for their ignorance. He says he is going to join the bandwagon. He likes the creative idealism of the invading expositorions because they are risk-takers. He thinks they could create a new kind of media. **cgw**

Wolfenstein 3d

Hottest Shareware Game
"...more like an interactive movie than [illegible] game"
Shareware Update

"Almost single-handedly justifying the existence of shareware..."
VideoGames & Computer Entertainment

"The first game technologically capable of immersing the player in a threatening environment."
Computer Gaming World

Imprisoned in a Nazi [illegible]
In an act of desperation you overpower your cell guard. Standing over his fallen body you frantically grab for his gun. Deep in the belly of a Nazi dungeon, you will escape—or die trying.

- Experience a 256-cell [illegible] scrolling virtual reality
- Hear professionally composed music with an AdLib™, Sound Blaster™, or compatible
- Four levels of game play make it enjoyable for the novice to the experienced player
- Battle with knives, pistols, and machine guns
- Easy to start playing, and instantly absorbing

Call Toll Free 1-800-GAME123
For the cost of shipping and handling, only $4.00, you'll receive Episode One, *Escape from Wolfenstein*. Or download Episode One and pay no shipping and handling. Call the Software Creations BBS and check out our FREE Apogee file section. BBS Phone Lines are:

- (508) 365-2359:2400 BAUD
- (508) 368-7036:2400-9600
- (508) 368-4137:2400-14.4K

Episodes two through six are sold separately and can be purchased by calling Apogee's toll-free number, shown above.

APOGEE

P.O. Box 476389
Garland, TX 75047

id SOFTWARE INC

Not Recommended for Younger Viewers Due to Realistic Depictions of Violence

Wolfenstein 3-D requires an IBM or 100% compatible computer with 640K RAM, a VGA graphics card, and a hard disk drive. Extended memory (XMS), expanded memory (EMS), joystick, and mouse are optional. IBM is a registered trademark of International Business Machines, Inc. Sound Blaster is a registered trademark of Creative Labs, Inc. AdLib is a registered trademark of AdLib, Inc.

Circle Reader Service #33

Play Hard. Play

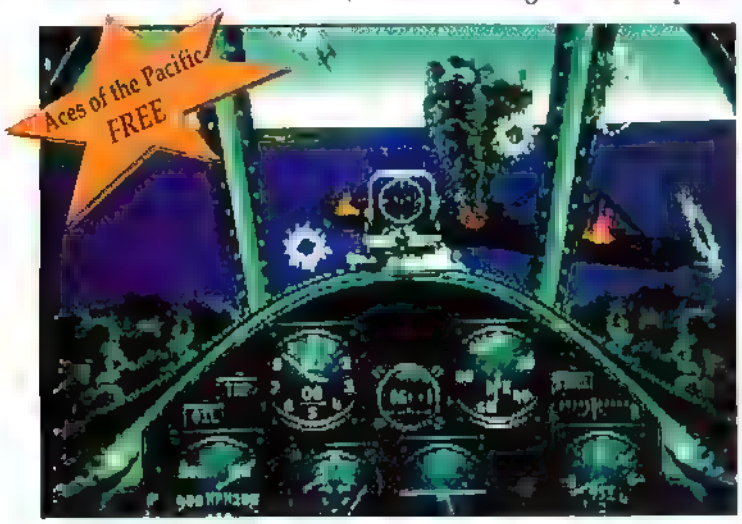
Now, buy something you really need and get some games you really want. Quarterdeck's QEMM-386™ gives you the highest performance memory management money can buy. It's the leading utility in the industry. It can help you get your work done faster by allowing you to use productivity-enhancing TSRs and network utilities you'd otherwise have to do without. What are you going to do with all the time you save? Play!

Get 3 free games when you buy the special QEMM-386 Game Bundle —*while supplies last*

Look for this Special Package at your favorite software store!

In the Sky

Step back into history and *experience* the emotion of airborne combat with the men and machines of the Pacific Theater of World War II. Attack carriers, air bases and fight the finest pilots

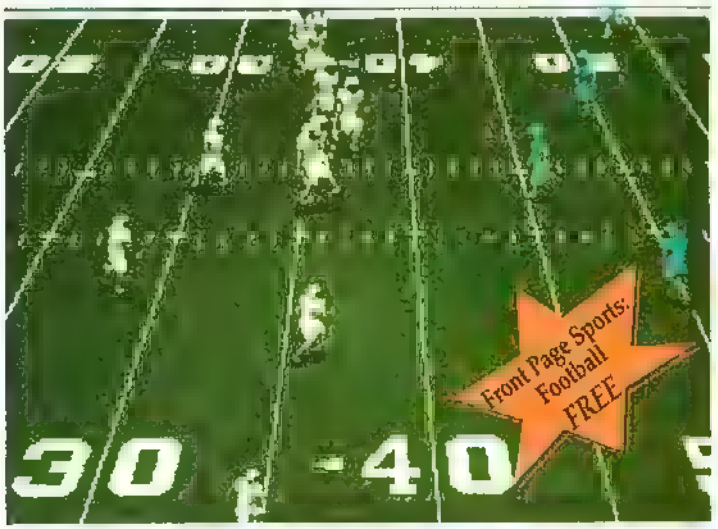


the enemy can throw against you. Super-realistic simulation includes 30 accurately recreated WWII fighters and bombers; legendary enemy (and friendly) aces to battle, and all the heart-pounding excitement of carrier landings. Choose from an array of missions or enlist for the entire war. You can even fly for the other side. Magnificent 240-page manual is complete with photos and war maps.

Aces of the Pacific
"The benchmark of the 90s for flight simulators."
—Simulation Magazine

On the Gridiron

Get into the action with this amazingly realistic simulation. Its 3-D look puts you in the middle of the action in the most complete football gaming package ever. Play quarterback arcade-style or be the coach and play a strategy game against an opponent or against the computer. View instant replays from a floating camera you position. Front Page: Football is designed to appeal to players at any level. You get a full 47-man roster including injured reserve, up to 28 teams and 1,400 players per league, 200+ stock plays, 300+ stat categories and your choice of exhibition or a full season of play.



Front Page Sports: Football
"... remains unchallenged as the most complete football game ever... for gridiron fans of all interest levels..."
—Electronic Games

Safe. Save Big.

$320 Retail Value

$500 In Coupon Discounts Enclosed

Through the Labyrinth

Send in your registration card and get this special free bonus! Ultima Underworld II incorporates the latest advancements in sound, 3D graphics and animation. You play Avatar, trapped with the other leaders of Britannia by the Guardian in a black rock gem. You will have to find your way out against seemingly overwhelming odds. But you must—or your entire country will die!

Ultima Underworld II: Labyrinth of Worlds
Registration Bonus Game

Work Safe

QEMM-386 is the number one memory management program in the world. Not only does it make games run better, it helps you when you get back to work—reducing the chance of crashing while making room for both your favorite TSRs or network utilities and memory hungry programs like WordPerfect or MS Windows. Whether you have one megabyte or eight, QEMM-386 can find more memory for your programs.

PCWEEK ANALYST'S CHOICE · PC MAGAZINE · THE PC/COMPUTING 200 BEST PC PRODUCTS CATEGORY WINNER · INFOWORLD PRODUCT OF THE YEAR · W 100 · LOTUS · WordPerfect Reader's Choice · PC WORLD BEST BUY · 1991 BYTE AWARDS OF EXCELLENCE · 1991 BYTE POURNELLE'S USER'S CHOICE AWARD · 1992 BYTE READERS' CHOICE AWARD

Play Safe

QEMM-386 version 6 gives your games all the conventional memory available on your PC. Automatically. No wonder QEMM-386 is specified by more game publishers than all other memory managers put together.

OUT OF MEMORY

Suggested U.S. Retail Price: $99.95

Circle Reader Service #83

Yes!

Qty	Product	Each	Totals
	QEMM-386 Game Pack	$99.95	
	Shipping & Handling $10 (Canada & USA only)		
	Calif. Residents add 8.25%		
	Total		

Payment method ☐Visa ☐MasterCard Expires ____/____ Card # _____

Name _____

Address _____

City _____ State ____ Zip ____

Please allow 3 weeks for delivery. For fastest service call (800) 354-3222 ext. 101

Quarterdeck Office Systems
150 Pico Boulevard, Santa Monica, CA 90405
(310) 392-9851 Fax (310) 314-4219
Quarterdeck International Ltd., B.I.M. House, Crofton Terrace, Dun Laoghaire Co. Dublin, Ireland
Tel.(353) (1) 284-1444 Fax: (353) (1) 284-4380

Quarterdeck

All games are complete, fully-functional versions. However, because of shipping considerations, individual game boxes are not included
©1993 Quarterdeck Office Systems. All trademarks are property of their respective owners.

From Digital Dreams To CD Reality

A look at the technical development behind Trilobyte's The 7th Guest

by Verne G. Lewis & Michael A. Barth

Computer generated special effects in the film and video worlds has been commonplace for years. It is only recently that computer end-users have begun to see the application of these new methods on the monitor screens of their own computer systems.

In the movie industry, special effects are consistently used. From *Blade Runner* through *Close Encounters*, special effects abound. In Hollywood these effects are taken to the highest level. Using Computer Aided Design (CAD) programs, producers design sets in order to decide if they will build actual models or simply render them in a graphic environment. Fortunately for us, PCs have brought graphics development down to earth and professional quality special effects can be produced with surprisingly minimal equipment.

Fast History

Breakthrough rotoscope technology played a major role in the advancement of film animation, allowing the creative artist to import images from reality into animated sequences. Animators merged their artistically creative world with life-like forms of motion represented on film. They shot the film, ran it through a projector, the image appeared on a light table, and they could manipulate each frame a step at a time. One could then trace each frame separately to capture the reality of movement in its pure, cellular form. Digital video has made the video camera the rotoscope of gaming development.

Cyber actor on green screen. It is easy being green

World Of Games

In the meteoric world of high-resolution graphics games, full-motion digital video is a fast emerging phenomenon. CD-ROM is the transient medium of choice for this technology. It has the mass-storage and speed required to provide interactive video sequences to the end-user. Still, how are animated segments imported into digital media?

Moving characters must be cut out, extracted, and pasted once more onto rendered backgrounds in the order of their sequence of events. This poses many problems to artists, technicians, and video producers in the multiple worlds of animated film, video production, and digital imaging.

Some animation techniques overlap with those used to produce special effects in live-action video. The beauty of all this is that it is often difficult to tell whether a certain result has been achieved through animation or special effects. The camera records, frame by frame, second by second, a sequence of images that differ only fractionally from one another. The illusion of progressive movement is created by projecting the series of frames at a rate that simulates motion.

Focus On Process

The process started for us when we were introduced to Rob Landeros and Graeme Divine of Trilobyte. Trilobyte is a company concentrating on original CD-ROM entertainment software. To call their work original is an understatement. Their project was *The 7th Guest*, a breakthrough in gaming software. I shared an interest with Rob and Graeme because I was looking into acquiring computer systems on which to develop CD-ROM base multimedia software. We spent an afternoon together discussing software and hardware options. A few months after I got my systems up and going, Rob offered us a chance to work with them.

Was I interested? Bill Gates himself had demonstrated parts of the game at the 1992 Multimedia Convention in San Francisco. He called it, "the new standard in multimedia entertainment". The CD-ROM game contains 36 minutes of full-motion video and dialogue recorded by live actors. It had taken the people at Trilobyte two years to develop a true, 3-D, 22-room mansion (each room taking at least one month to produce) in which the game takes place. The player can move throughout the mansion as high-resolution graphic backgrounds scroll and rotate around him. Not only has Trilobyte broadened the frontier of multimedia gaming, but *The 7th Guest* may well be establishing the future path that this form of entertainment will take.

Graphics Assignment

My first assignment was to develop the introductory sequence to the game. Trilobyte hired a video crew to set up a green screen background (after a disappointing experience with their blue screen, see Graeme's notes in the Computer Game Developers Conference report) on which all their live action video sequences

would be shot. The green screen gave a neutral background to all our video sequences. This allowed us to render the green part of the image transparent. Our job was to develop the backgrounds for the introduction to the game and "paste" actors onto the different backgrounds that we developed.

I called on Andy Anderson, a graphics artist, to work with me on this. He had an extensive background in fine art, an interests in working with computer graphics, and a strong work ethic. The job could be broken down into three steps. First we had to strip, link, and clean up the digital video images, and add any special effects required by the script. Next we had to develop the backgrounds on which the various introductory scenes would play. Finally, we had to place the digital video onto the backgrounds.

High 8 Hits

While we were waiting for Trilobyte to provide the digital video to us, we took two approaches to the development of the backgrounds. Not only did we take the approach of rendering the backgrounds with *AutoDesk Animator Pro*, but since several of the scenes take place outside, we took a High 8 video-camera and taped the basis for the backgrounds.

We took a ComputerEyes/RT color video "frame grabber" board and captured the various scenes. We shot a shade tree and a view of a valley from a hillside graveyard. These videotaped views would be used, in part and in whole, as the base for our exterior backgrounds. This technique worked so well that we applied it to our interiors as well. We taped a bar, a bedroom, and a doll shop, which became the background for the introduction.

GIFfy J-PEGS

Once we had captured and stored these background images, we manipulated them with *Animator Pro* until we had the exact backgrounds called for in the script. Each background not only had to be exact and realistic in graphic design and detail, but the staging of the digital video characters was critical. Trilobyte's production company videotaped the actors in front of a blue screen background, which would later be converted to green (the color chosen to function as transparent in *Animator Pro*). The the footage was captured and stored into individual, compressed files known as JPGs. These individual files where given to us on 250 Mb backup tapes.

We then transferred them for processing to our hard drive. We chroma-striped the JPG files to GIF files, a file format that *Animator Pro* could read. During this process the original JPGs were resized and cropped to 640X320, the working size for the game. Also, this process automatically converted the blue background on which the actor performed to green. Initially Trilobyte converted the JPGs to GIFs for us, but when they developed an in-house utility to strip out the chroma blue and replace it with green, we took over this process.

Background Utility

Once we had this utility, we striped the chroma blue out and converted individual JPG files to GIF files. We then reassembled the individual GIF files into continuous digital video. We treated this digital video as an animated reality, and we were able to enhance the images using special effects we developed in *Animator Pro*.

Background on which the cyber actor will be composited.

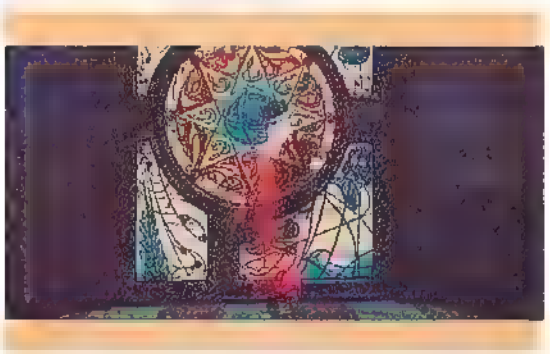
Compare the video camera's relationship in the production of the *The 7th Guest*, to that of the rotoscope. The same way the rotoscope created technical advances in animation by allowing the animator to incorporate the form and movement of real life images into an animated reality, so the video camera has allowed us to take digital images into a computerized environment. This step of video taping actors and converting them into GIF files, which are then reassembled into*Animator Pro*, represents a monumental break in game production.

GIFs & FLCs

This digital rotoscoping process is completed when the frames are assembled into *Animator Pro*. In *Animator Pro* there is a feature called NumPic. Using NumPic you can take a series of numbered pictures and load them into the program, which in turn can save them as a single file with a FLC (the native file format for *Animator Pro*) extension. The numbered series of pictures comes in and makes a FLC file. The images have been threaded together by the program.

The green background is treated as if it were transparent by *Animator Pro*. The series of GIF files are then assembled into FLC files. These FLC files can be composited onto backgrounds, rendered or captured, enhanced, and played to reveal their animated form.

Sometimes, when frames have been converted to GIFs, and then to FLCs, they don't have the same color palletes. If you look at the palletes of various GIFs, even those taken from the same series, often the palletes will be noticeably different. Each frame can have a different pallete. If the pallets change from frame to frame, GIF to GIF, you get flashes of differing light as the FLC series is played. To solve this problem, *Animator Pro* has developed the feature called One Pallete. One Pallete lets you go into your FLC file and make all the palletes the same throughout the series.

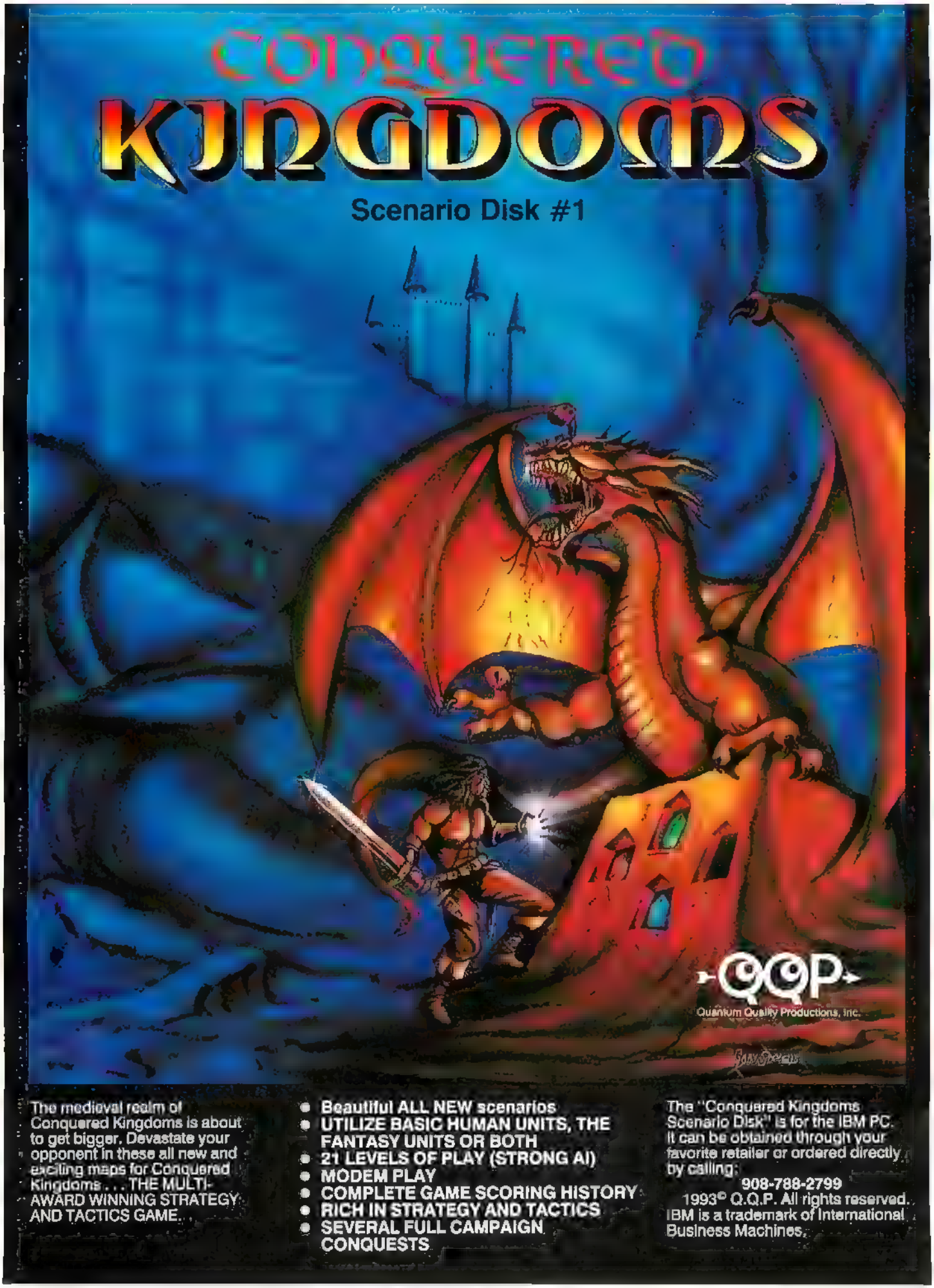


Voila! Our techno-wizardry seamlessly melds actor and background—a marriage made in cyber-heaven.

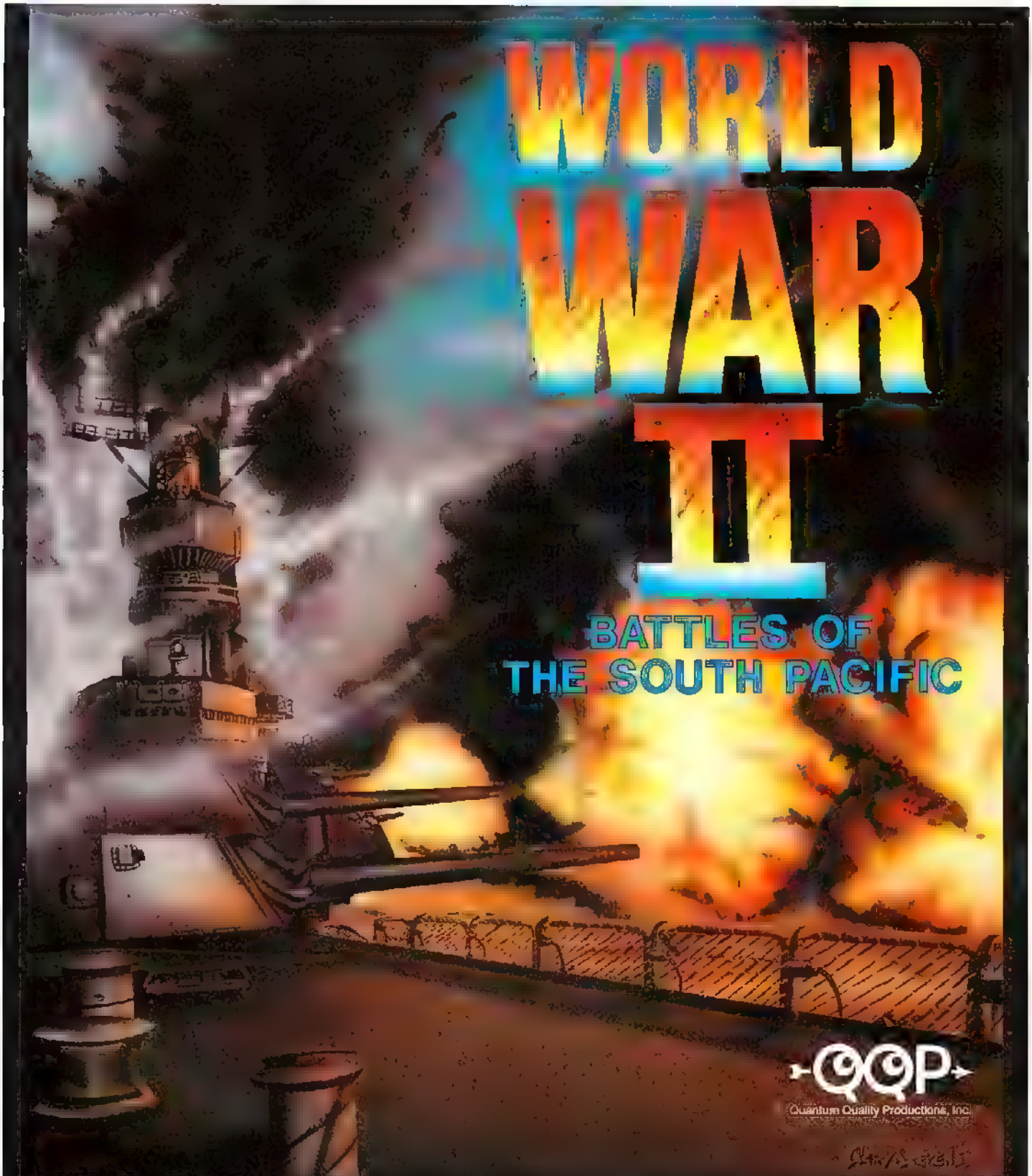
Clean Up

Once the series is One Paletted, the images can be cleaned up. It is a matter of editing frame by frame. Perhaps there was a lighting anomaly during the shoot that caused parts of the green screen to remain opaque. The editor must make sure any areas of green screen, or other anomalies, are removed. Each frame must be carefully cleaned before special effects can be added.

Animated graphics can take up huge amounts of storage, especially when special effects are involved. It is not unusual to


CONQUERED
KINGDOMS
Scenario Disk #1
QQP
Quantum Quality Productions, Inc.
The medieval realm of Conquered Kingdoms is about to get bigger. Devastate your opponent in these all new and exciting maps for Conquered Kingdoms . . . THE MULTI-AWARD WINNING STRATEGY AND TACTICS GAME. . .
• Beautiful ALL NEW scenarios
• UTILIZE BASIC HUMAN UNITS, THE FANTASY UNITS OR BOTH
• 21 LEVELS OF PLAY (STRONG AI)
• MODEM PLAY
• COMPLETE GAME SCORING HISTORY
• RICH IN STRATEGY AND TACTICS
• SEVERAL FULL CAMPAIGN CONQUESTS
The "Conquered Kingdoms Scenario Disk" is for the IBM PC. It can be obtained through your favorite retailer or ordered directly by calling:
908-788-2799
1993© Q.Q.P. All rights reserved.
IBM is a trademark of International Business Machines.

Circle Reader Service #99



The time: World War II
The place: The South Pacific
Wage war for the sole ownership of the South Pacific. Historically correct battles challenge all, to do better than the Navy did as it happened in WWII. Not only naval combat, but air and land combat. Create and transport armies to enemy ports through air, naval, and bombardments from your adversaries to take over their bases.

- MANY SCORCHING BATTLES TO CHOOSE FROM
- PLAY JAPANESE OR U.S. FORCES
- MODEM PLAY
- EXPERT MENUS OR NOVICE MENU
- SEVERAL LEVELS OF DIFFICULTY
- STUNNING HISTORICAL ACCURACY
- HUNDREDS OF SHIP AND PLANE TYPES
- INTUITIVE INTERFACE

The "WWII: Battles of the Pacific" is for the IBM PC. It can be obtained through your favorite retailer or ordered directly by calling:
908-788-2799

1993© Q.Q.P. All rights reserved. IBM is a trademark of International Business Machines.

Circle Reader Service #101

have 25 Mb or larger FLC files. Speed also becomes a paramount issue when dealing with large files. Our systems were 486s running at 33 MHz with 1 Gb (gigabyte!) hard drives and 16 Mbs of RAM.

Once we had finished cleaning up and adding the necessary special effects to the digital videos of the actors, we saved the FLC files one last time. We then loaded the FLC files containing the appropriate backgrounds and matted the actors into the scene. Our finished product, a completed sequence with live actors performing in the cyberspace of our digitized and enhanced backgrounds. In one sequence we had to layer the background scene. The character was required to flee the scene into the woods. In this case we wanted the character to run behind a tree. We matted the characters to the background, and then we matted the tree over the character as he ran away.

Finishing Touches

Trilobyte introduces their game via a book in which the turning pages came to life. Our final task was to create a special effect for the people at Trilobyte. Gradually decreasing and increasing the Edge effect, provided by AutoDesk Animator Pro, over several stills of the first and last frames, had a dynamic graphic impact. Each introductory sequence appeared to be an engraving that came to life, played out its scene, and then faded back into an engraving.

Delivering The Goods

We saved each of our edited and composited FLC files on the same 250 MB backup tape that the original, compressed JPG files arrived on. Upon delivery of the finished scene, the introductory sequence, Rob Landeros offered us an opportunity to convert, edit, and clean up all the digital video that they intended to incorporate into the game. Also, they wanted us to add in special effects for the digital video.

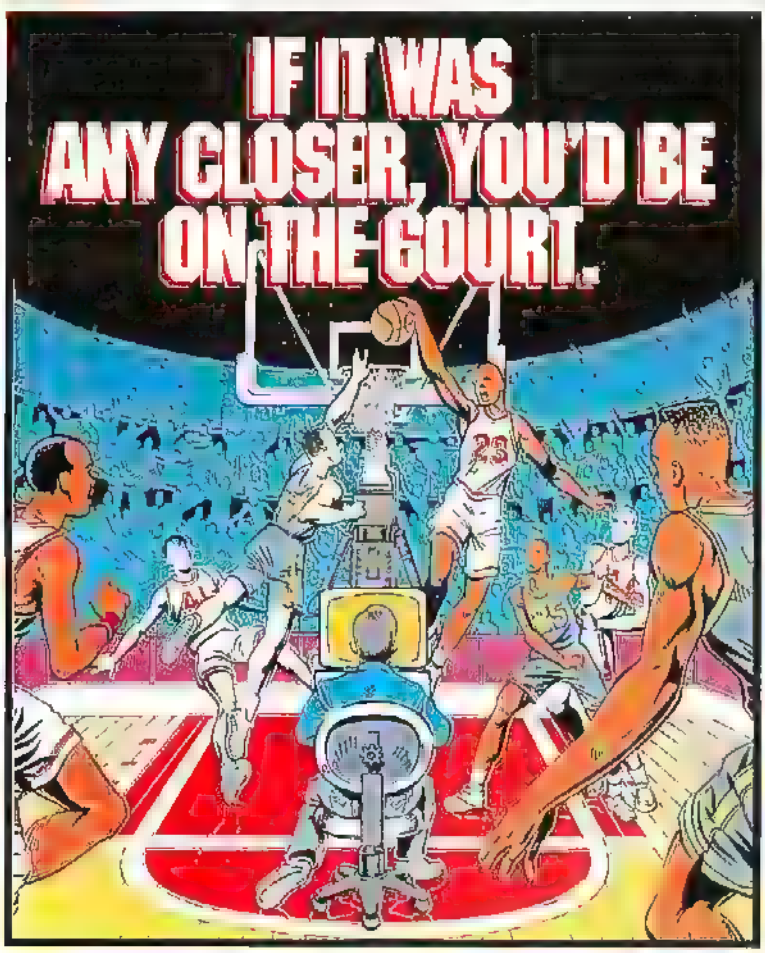
Back On The System Again

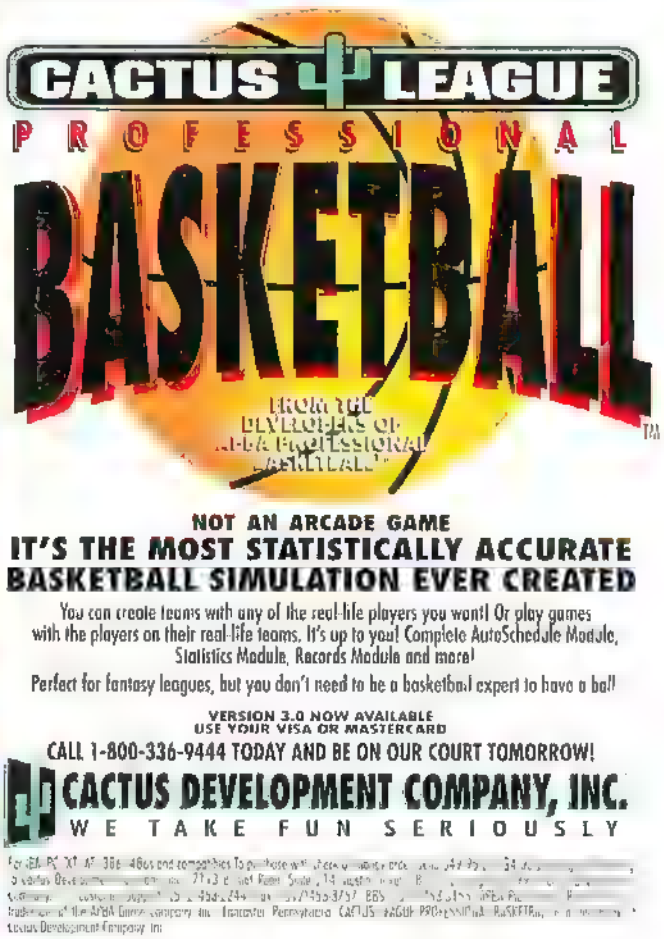
Andy handled the special effects. I focused on converting and cleaning up the JPG files, assembling the GIF files, and cleaning up and editing the digital video. Employing the techniques we developed throughout the introduction, we proceeded to work our way through over 11,000 frames.

During the months we spent working on *The 7th Guest*, there were times when we felt like anyone in the embryonic stages of any technological breakthrough: overworked and out of our depth. It was critical to our success to be working for Rob and Graeme. They made certain that we had the hardware and software tools, and more important, the support we needed so much to succeed.

Pushing The Envelope

Thomas Edison once said, "Opportunity is missed by most people, because it is dressed in overalls and looks like work." By working for Trilobyte on The 7th Guest, Andy and I were able to take what we know about art and computers — graphic design, video animation, and special effects — into the uncharted realms of cyberspace. In turn we were given the chance to be part of the creation of one of the most powerful computer games developed to date. Now that the work is behind us, and The 7th Guest is on its way to your computer, I think back on the time and effort that Andy and I put into this project, and wonder when such an incredible opportunity will come along again. This opportunity allowed us to help push the technological envelope and broaden the horizons of multimedia gaming. CGW





ETA - Autumn 1993
Mallard
© Copyright 1993, Mallard Software
© Copyright 1993, Aviation Simulations, Inc.
Circle Reader Service #72

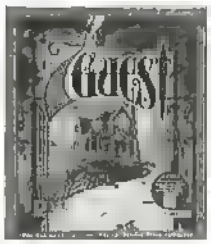
COMPUTER Express

The World's Ultimate Superstore

FREE
UPS Ground Shipping

Same Day Delivery on In Stock Items

CD—7th Guest



Henry Stauf is an evil toymaker whose work holds a sinister secret. When a series of children die in mysterious circumstances after buying his toys, the local community begins to ask questions and the plot thickens when Stauf himself meets an untimely demise. The game begins when six guests are anonymously welcome to the toymaker's remote hilltop mansion, now eerily vacant (For IBM)

Publisher: Virgin **$60**

Pirates Gold!

A fresh new action adventure in the swashbuckling spirit of the original! Spectacular new adventures with more ways to explore will keep players coming back! More opportunities to obtain treasures, power and prestige. Enhanced swordfighting and combat capabilities. Players rewarded for outstanding triumphs. Stunning new VGA super VGA art and graphics that bring to life the untamed era of piracy in the 17th century Caribbean (For IBM DOS)

Publisher: Microprose **$42**

Freddy Pharkas—Frontier Pharmacist

Save the legend of a man raised as a gunslinger who gave it all up for his first love: pharmacology. The year is 1885, the setting: Post Gold, Russ, California. With pestles and pistols, you defend your bucolic burg from one catastrophe after another, from snake oil peddlers, hired guns, riverboat gamblers, to terminal flatulence! Point and click your way through sagebrush, livestock and buzzards, & swingeng saloon doors... just like all the movie pitches show (For IBM DOS)

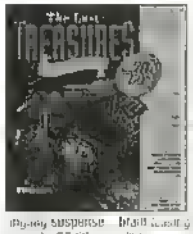
Publisher: Sierra **$42**

Flight Control System

ThrustMaster's **Flight Control System** is the most realistic joystick on the market, offering the look and feel of an actual jet fighter stick. The **Flight Control System** also has the most control of any joystick on the market. With four buttons and a 4-way hat switch, computer pilots spend less time looking at the keyboard and more time winning all battles. The additional functions on the stick are supported by the latest flight simulators and it works as a two button joystick in all programs. Get real, get ThrustMaster—the leader in innovative flight-sim hardware

Manufacturer: ThrustMaster **$42**

The Lost Treasure of Infocom Vol. 1



A fortune of nine active mystery, fantasy, and science-fiction adventures. The original games you have to play hundreds of dollars worth of one. Plus stacked collector's edition. Explore underground labyrinths, sorcerers, dimbers, lost space stations, and more! Hours of spine-tingling suspense, brain-teasing puzzles, sidesplitting comedy. 20 titles you'll treasure in your software library (For IBM DOS and Mac)

$46 for CD ROM **$42**

Publisher: Activision

Day of the Tentacle

Maniac Mansion sequel. **Day of the Tentacle** sucks players into a wacky cartoon world to save the planet from Dr. Fred Edison's mutated pet tentacles. By contemporaneous frenzied kids in three different time periods and employing warped cartoon logic, players save mankind from tentacle takeover.

$42 for IBM CD-ROM **$34**

Publisher: LucasArts Entertainment

Orders accepted on our toll free number Mon-Sat 8:30 to 5:30 EST. Visa, MasterCard, and Discovercard accepted. All credit card orders processed within 24 hours. Continental US shipments: UPS Ground $5, Airborne Overnight $7. Corp, Gov't, Educ, APO, FPO, International orders accepted.

VISA DISCOVER

Call orders to:
800-228-7449 x 321

Fax: 508-443-5645
Voice: 508-443-6125

JOYSTICKS/GAMECARDS

Analog Plus Joystick	22
Flight Stick	35
GameCard 2-Pen Programmable	23
GameCard III Automatic	25
GameCard III MCA Automatic	39
Maxx Flight Yoke II	30
Thrustmaster ACM Game Card	59
Thrustmaster Pro Flight Ctrl	109
Thrustmaster Rudder Pedals	109
Thrustmaster Upgrade F16/F17A	15
Thrustmaster Upgrade Falcon	15
Thrustmaster Weapon Control	79
Thunderstick	25

SPEAKERS

*Koss ID 6 MPC Speakers	69
Koss Speaker Pair HD 4	39
Koss Speakers Amplified HD-1	20
Labtec Speakers CS-150	18
Labtec Speakers SS-700	29

AMIGA RECREATION

A-Train
Caesar
Civilization
Dark Seed
Dune

IBM CD-ROM TITLES

CD-Adventures of Willy Beamish	49
CD-Animals MPC VERSION	72
*CD-Arthur's Teacher Trouble	45
CD-Arts and Entertainment	45
CD-Barney Bear Goes to Space	30
CD-Beauty and the Beast MPC	25
CD-Bodies Think & Talk French	99
CD-Case of Cautious Condor	35
CD-Chessmaster 3000 Windows	59
CD-Cinemania Movie Guide WIND	49
CD-Clinton	25
*CD-Compton's Enc. Comp Ugrd	99
CD-Computer's Interactive Ency	239
CD-Conan The Cimmerian	25
CD-Curse of Enchantia	75
CD-Eco Quest Search for Cetos	40
CD-Elect. Travel California	30
CD-Global Explorer	90
CD-Golf Guide MPC (CA,HI)	25
CD-Grammy Awards	75

CD-Learning to Speak Spanish	65
CD-Lost in Serengeti Windows	49
CD-Lost in Yellowstone	45
CD-Mario Andretti Racing	20
CD-MPC Wizard Daydreams	12
CD-Mantis Experimental	45
CD-Mario Chase Family Health	65
CD-Murder Strictly Business	95
CD-Musical Instruments	45
CD-PC Karaoke	99
CD-Photo CD Access Windows	29
CD-Sherlock Holmes	24
CD-Secret of Monkey Island	45
CD-Sherlock Detective Volume 1	45
CD-Sherlock Detective Volume 2	45
CD-Sherlock Detective Volume 3	45
CD-Speaking Dictionary	30
CD-Spelling Ability Arcade	30
CD-Space Quest IV	40
CD-Sports Illustrated	39
CD-Street Atlas USA	39

CD-Tetris	45
CD-Treasure Stuff	20
CD-Tom Landry Strategy	39
CD-Ultima Trilogy	49
CD-Underwriter's Adventure	45
CD-Grolier Encyclopedia	65
*CD-Iron Helix	69
*CD-Journey/Man Project	35
CD-Just Grandma & Me	45
CD-Kid Pix Deluxe Windows	39
*CD-Photo CD Access Macintosh	49
CD-Sherlock Detective Vol. 1	45
CD-Sherlock Detective Volume 2	45
CD-Sherlock Detective Volume 3	45
CD-Space Adventure	39
CD-Spaceship Warlock	35
CD-Spelling Ability Arcade	30
CD-Variety Museum Art	44
CD-Virtual Reality & Venus	49
CD-Virtual Valerie Undercover	49

CD-ROM DRIVES & UPGRADE KITS

Chinon CDS -535 Internal Drive	333
Chinon CDS-435 External Drive	444

IBM EDUCATION

Algebra Blaster Windows	37
Algebra Blaster Plus Windows	39
Animal Kingdom Windows	49
Cute Things Windows	25
GMAT w/CLUES Series	95
GRE w/CLUES Series	95
*Kidtalk	25
Language Acquisition Comp. 5.0	59
Language Acquisition Spanish 5.0	59
Logo Writer	59
Math Rabbit Advanced	25
Mickey's 123's Enhanced	20
Mickey's ABC's Enhanced	30
Moby's Math House	35
Mystery of the Mummy	35
Oregon Trail Deluxe Win	27
Peggy's Adventures in Time	27
Playroom Windows	35
Rock & Bach Series	26
SAT Personal Trainer	25
SAT w/CLUES Series	35
Science Adventure	35
Treehouse	35

Party Planner	27
Personal Pediatrician	42
Personal Physician	43
Print Shop Deluxe	30
*Print Shop Deluxe Curse Chara	43
Print Shop Deluxe Windows	125
Profit for Windows	9
Quicken for Windows	40
*Quicken 5 Apple/DOS	45
Your Desk for Windows	

IBM RECREATION

AD&D Dark Sun Shattered Lands	35
AD&D Eye of the Beholder II	39
AD&D Eye of the Beholder III	39
ATAC Secret War Against UFO	32
Ace of Pacific 1946 WWII Mod	38
Ace of the Pacific VGA	43
Alien Dark Eclipse	35
Air Force Commander	32
Air Warrior SVGA	37
Aircraft & Scenery Designer	29
Alone in the Dark	32
Amazon The Guardians of Eden	37
Ancient Art of War in Skies	42
Ancient Art of War	7

Here are only a few of the 3,000 products we've delivered to our satisfied customers.

Computer Express 31 Union Ave. Sudbury, MA 01776

Circle Reader Service #42

This Is The Only Hardware You Need To Shop The World's Ultimate Games Superstore.

Spectre

Spectre Supreme is the sequel to the best selling cyberspace combat/action game. Contend with slicers, auto-gun turrets and hunter killers. Your deadly enemies now use radar shielding and optical cloaking. Fortunately you now command smart missiles, seekers, proximity mines and spinners. Get ready for the hottest electronic adrenaline rush you'll ever experience. (For Mac)

Spectre PC delivers advanced simulation technology featuring full color graphics, breathtaking scenery with fluid 3D animation. Customizable battle craft design. High quality digitized sounds. (For IBM DOS)

Spectre Supreme **$38** *Spectre PC* **$32**

Publisher: Velocity

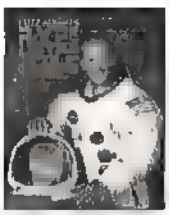
X-Wing

X-Wing, a space combat simulator in which players pilot X-, Y- and A-Wing fighters recreates the epic space battles between the Rebel Alliance and the evil Empire made famous in "Star Wars." As new pilots, players take the starfighters through their paces in training, historical combat missions and three intense tours of duty. (For IBM DOS)

$42

Publisher: LucasArts Entertainment

Buzz Aldrin's Race for Space



Buzz Aldrin's Race for Space is a computer simulation of man's greatest adventure, the race to the moon. It recreates all the excitement of every space mission using digitized footage from liftoffs, space walks, lunar landings and splashdowns. As Space Director, you have at your disposal the entire space inventories of both the USA and USSR and can plan and direct every space mission: sub-orbitals, orbitals manned and unmanned, planetary, and lunar flybys, lem tests, lunar passes and even emergency space rescues!

(For IBM DOS)

$42

Publisher: Interplay

FREE UPS Ground Shipping

Same Day Delivery on In Stock Items.

No sales tax except for Mass. add 5%. Personal checks will delay shipment 5 business days. Products covered by manufacturer's guarantee. Defective software replaced immediately. No CODs. Item availability and price subject to change without notice. 15% restocking fee for non-defective returns.

CD—Who Killed Sam Rupert?

CMC presents the most interactive murder mystery available on CD-ROM. In April, New Media Magazine presented **Who Killed Sam Rupert?** with four NOVISION AWARDS: Best Adult Game, Best Story/Script, Best Product Interface Design, and an overall Award of Excellence. Interactively, investigate, interrogate and tour the places, faces and final hours of the dead restaurateur Sam Rupert. (For IBM)

$24

Publisher: Creative Multimedia

C.Y.P.H.E.R.: OPERATION WILDLIFE & OPERATION U.S. PRESIDENTS

Adventure and discovery! The whole family can join in the race to outwit Dr. Jimmy D. Lark, right hand man of Dr. Cypher, and crack the secret codes. Each adventure offers a unique learning experience in **OPERATION WILDLIFE**, explore the fascinating world of mammals in **OPERATION U.S. PRESIDENTS**, test your knowledge of presidential trivia and American history. Each comes with built-in Encyclopedia.

(For IBM DOS & Macintosh)

Mac Version — $36

$30

Publisher: Tanager Software

PORT-ABLE Sound Plus™

Perk up your presentations. Make training more effective. And put some guts into your gaming pastimes. Anytime. Anywhere. Because now there's **PORT-ABLE Sound Plus™**, the first truly portable sound peripheral to deliver 16 bit CD quality music with stereo audio capabilities. And, since you just plug into your IBM compatible PC, desktop or laptop parallel port, you don't need an engineering degree or even a screwdriver. Comes with everything you need, including a high fidelity speaker and built-in microphone. (For IBM,

$154

Publisher: Digispeech

日本の皆様よりのオーダー大歓迎！日本語で FAX:0011-508-443 5645、
又は,CompuServeID:70007,1534で見積りをお問い合わせ下さい。
迅速に,如何なる御要望にも誠意をもってお応え致します。

COMPUTER Express

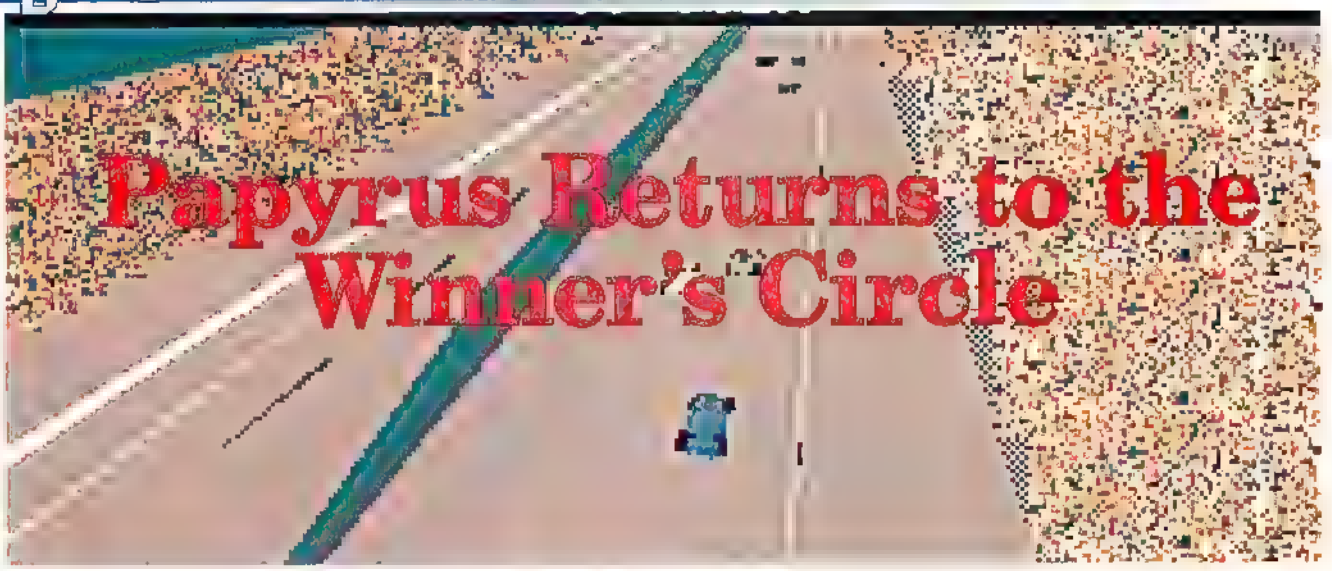
The World's Ultimate Games Superstore

Battle Chess	16
Battle Isle	28
Command HQ	24
Conquered Kingdoms	32
Conquest of Japan	18
Dark Lands	37
Darkseed	43
Dark Sun: Shattered Lands	32
Dragon Lore	32
Dragon's Lair Singe's Castle	32
Dune II	32
Eye of the Beholder	34
Eight Ball Deluxe	32
Fantasy	35
Empire Deluxe	32

Doom	9
Doom Hint Book	9
Doom II	21
Doom II Hint Book	18
Grand Canyon Upgrade	28
Grand Slam Bridge	18
Great Naval Battle: North Atlantic	40
Great Naval Battles 1	25
Great Naval Battles: Scenario	18
Great Naval Battles SuperShips	32
HardBall III	15
HardBall III Big League Parks	15
HardBall III Player Disk	18
Harpoon Scenery Upgrade	27
Hoyles Book of Games Classic	32
HyperSpeed	32
Indiana Jones: Fate of Atlantis	37
Jack Nicklaus Signature Golf	15
Jack Nicklaus Signature Tour 1	15
Jack Nicklaus Signature Tour 2	18
Jagged Alliance	33
Jet Fighter II: Tactical Ranger	37

Links: Mauna Kea Course SVGA	18
Links Pro	32
Links Pro Bountiful Course	18
Links Pro Firestone Course	18
Links Pro Pinehurst Course	18
Links Pro Troon Course	18
Links Pro Village Pointe Course	18
Lode Runner	18
Lost Admiral	40
Lost Treasures of Infocom	37
Lost Vikings	32
Lucasfilm Games Sampler	18
Mantis Experimental Fighter	18
Mantis Xpress Pack	18
Master of Orion	37
Michael Jordan Flight	40
Microsoft Flight Simulator	40
National Lampoons Chess Maniac	37
Origin FX Screen Saver	25
Outpost	40
Perfect General	26
Perfect General II	35
Power Pakkers	27
Power Pakkers for Windows	37
Prince of Persia	22
Prophecy	26
Putt-Putt Fun Pack	18
Railroad Tycoon Deluxe	15
Rampart	18
Red Baron	39
Red Baron SVGA	8

Secret Weapons of the Luftwaffe	15
Serf City	33
Settlers	33
Shadow of the Comet	32
Shadow of the Comet for Windows	32
Shadowcaster	40
Sherlock Holmes Consulting Detective	24
Sherlock Holmes Consulting Detective II	40
Sherlock Holmes Consulting Detective III	40
Silent Service II	24
Sim Ant	32
Sim Ant for Windows	37
Sim City	32
Sim City 2000	37
Sim City 2000 for Windows	37
Sim City for Windows	27
Sim Earth	37
Sim Earth for Windows	37
Sim Life	37
Sim Life for Windows	37
SimCity for Windows	27
SimEarth for Windows	32
Solitaire's Journey	20
Sound Graphic Flight Upgrade	37
Space Quest V	32
Star Control II	46
Strike Commander	46
Strike Commander Speech Pack	16
Stunt Island	32
Super Solvers Gizmos & Gadgets	18
Super Solvers Midnight Rescue	18
Super Solvers Operation Neptune	18
Super Solvers Outlaws of Time	18
Tank	18
Tank Commander	18
Tank Commander Speech Pack	18
Task Force 1942	37
Tegel's Mercenaries 2: Dig Deeper	18
Terminator 2029	32
Test Drive II: Duel	18
Test Drive III: The Passion	32
Test Drive IV	32
Test Drive V	32
Test Drive: Super Cars	18
Test Drive: The Ultimate Collection	32
Theme Park	32
Tie Fighter	32
Tie Fighter Defender of the Empire	18
Tie Fighter Missions Disk	18
Tie Fighter Tactical Ranger	18
Tie Fighter Tactical Ranger Disk	18
Tie Fighter Tactical Ranger Disk II	18
Tie Fighter Tactical Ranger Disk III	18
Tie Fighter Tactical Ranger Disk IV	18
Tie Fighter Tactical Ranger Disk V	18
Tie Fighter Tactical Ranger Disk VI	18
Tie Fighter Tactical Ranger Disk VII	18
Tie Fighter Tactical Ranger Disk VIII	18
Tie Fighter Tactical Ranger Disk IX	18
Tie Fighter Tactical Ranger Disk X	18
Tie Fighter Tactical Ranger Disk XI	18
Tie Fighter Tactical Ranger Disk XII	18
Tie Fighter Tactical Ranger Disk XIII	18
Tie Fighter Tactical Ranger Disk XIV	18
Tie Fighter Tactical Ranger Disk XV	18
Tie Fighter Tactical Ranger Disk XVI	18
Tie Fighter Tactical Ranger Disk XVII	18
Tie Fighter Tactical Ranger Disk XVIII	18
Tie Fighter Tactical Ranger Disk XIX	18
Tie Fighter Tactical Ranger Disk XX	18
Tie Fighter Tactical Ranger Disk XXI	18
Tie Fighter Tactical Ranger Disk XXII	18
Tie Fighter Tactical Ranger Disk XXIII	18
Tie Fighter Tactical Ranger Disk XXIV	18
Tie Fighter Tactical Ranger Disk XXV	18
Tie Fighter Tactical Ranger Disk XXVI	18
Tie Fighter Tactical Ranger Disk XXVII	18
Tie Fighter Tactical Ranger Disk XXVIII	18
Tie Fighter Tactical Ranger Disk XXIX	18
Tie Fighter Tactical Ranger Disk XXX	18
Tie Fighter Tactical Ranger Disk XXXI	18
Tie Fighter Tactical Ranger Disk XXXII	18
Tie Fighter Tactical Ranger Disk XXXIII	18
Tie Fighter Tactical Ranger Disk XXXIV	18
Tie Fighter Tactical Ranger Disk XXXV	18
Tie Fighter Tactical Ranger Disk XXXVI	18
Tie Fighter Tactical Ranger Disk XXXVII	18
Tie Fighter Tactical Ranger Disk XXXVIII	18
Tie Fighter Tactical Ranger Disk XXXIX	18
Tie Fighter Tactical Ranger Disk XL	18
Tie Fighter Tactical Ranger Disk XLI	18
Tie Fighter Tactical Ranger Disk XLII	18
Tie Fighter Tactical Ranger Disk XLIII	18
Tie Fighter Tactical Ranger Disk XLIV	18
Tie Fighter Tactical Ranger Disk XLV	18
Tie Fighter Tactical Ranger Disk XLVI	18
Tie Fighter Tactical Ranger Disk XLVII	18
Tie Fighter Tactical Ranger Disk XLVIII	18
Tie Fighter Tactical Ranger Disk XLIX	18
Tie Fighter Tactical Ranger Disk L	18
Tie Fighter Tactical Ranger Disk LI	18
Tie Fighter Tactical Ranger Disk LII	18
Tie Fighter Tactical Ranger Disk LIII	18
Tie Fighter Tactical Ranger Disk LIV	18
Tie Fighter Tactical Ranger Disk LV	18
Tie Fighter Tactical Ranger Disk LVI	18
Tie Fighter Tactical Ranger Disk LVII	18
Tie Fighter Tactical Ranger Disk LVIII	18
Tie Fighter Tactical Ranger Disk LIX	18
Tie Fighter Tactical Ranger Disk LX	18
Tie Fighter Tactical Ranger Disk LXI	18
Tie Fighter Tactical Ranger Disk LXII	18
Tie Fighter Tactical Ranger Disk LXIII	18
Tie Fighter Tactical Ranger Disk LXIV	18
Tie Fighter Tactical Ranger Disk LXV	18
Tie Fighter Tactical Ranger Disk LXVI	18
Tie Fighter Tactical Ranger Disk LXVII	18
Tie Fighter Tactical Ranger Disk LXVIII	18
Tie Fighter Tactical Ranger Disk LXIX	18
Tie Fighter Tactical Ranger Disk LXX	18
Tie Fighter Tactical Ranger Disk LXXI	18
Tie Fighter Tactical Ranger Disk LXXII	18
Tie Fighter Tactical Ranger Disk LXXIII	18
Tie Fighter Tactical Ranger Disk LXXIV	18
Tie Fighter Tactical Ranger Disk LXXV	18
Tie Fighter Tactical Ranger Disk LXXVI	18
Tie Fighter Tactical Ranger Disk LXXVII	18
Tie Fighter Tactical Ranger Disk LXXVIII	18
Tie Fighter Tactical Ranger Disk LXXIX	18
Tie Fighter Tactical Ranger Disk LXXX	18
Tie Fighter Tactical Ranger Disk LXXXI	18
Tie Fighter Tactical Ranger Disk LXXXII	18
Tie Fighter Tactical Ranger Disk LXXXIII	18
Tie Fighter Tactical Ranger Disk LXXXIV	18
Tie Fighter Tactical Ranger Disk LXXXV	18
Tie Fighter Tactical Ranger Disk LXXXVI	18
Tie Fighter Tactical Ranger Disk LXXXVII	18
Tie Fighter Tactical Ranger Disk LXXXVIII	18
Tie Fighter Tactical Ranger Disk LXXXIX	18
Tie Fighter Tactical Ranger Disk XC	18
Tie Fighter Tactical Ranger Disk XCI	18
Tie Fighter Tactical Ranger Disk XCII	18
Tie Fighter Tactical Ranger Disk XCIII	18
Tie Fighter Tactical Ranger Disk XCIV	18
Tie Fighter Tactical Ranger Disk XCV	18
Tie Fighter Tactical Ranger Disk XCVI	18
Tie Fighter Tactical Ranger Disk XCVII	18
Tie Fighter Tactical Ranger Disk XCVIII	18
Tie Fighter Tactical Ranger Disk XCIX	18
Tie Fighter Tactical Ranger Disk C	18
Tie Fighter Tactical Ranger Disk CI	18
Tie Fighter Tactical Ranger Disk CII	18
Tie Fighter Tactical Ranger Disk CIII	18
Tie Fighter Tactical Ranger Disk CIV	18
Tie Fighter Tactical Ranger Disk CV	18
Tie Fighter Tactical Ranger Disk CVI	18
Tie Fighter Tactical Ranger Disk CVII	18
Tie Fighter Tactical Ranger Disk CVIII	18
Tie Fighter Tactical Ranger Disk CIX	18
Tie Fighter Tactical Ranger Disk CX	18
Tie Fighter Tactical Ranger Disk CXI	18
Tie Fighter Tactical Ranger Disk CXII	18
Tie Fighter Tactical Ranger Disk CXIII	18
Tie Fighter Tactical Ranger Disk CXIV	18
Tie Fighter Tactical Ranger Disk CXV	18
Tie Fighter Tactical Ranger Disk CXVI	18
Tie Fighter Tactical Ranger Disk CXVII	18
Tie Fighter Tactical Ranger Disk CXVIII	18
Tie Fighter Tactical Ranger Disk CXIX	18
Tie Fighter Tactical Ranger Disk CXX	18
Tie Fighter Tactical Ranger Disk CXXI	18
Tie Fighter Tactical Ranger Disk CXXII	18
Tie Fighter Tactical Ranger Disk CXXIII	18
Tie Fighter Tactical Ranger Disk CXXIV	18
Tie Fighter Tactical Ranger Disk CXXV	18
Tie Fighter Tactical Ranger Disk CXXVI	18
Tie Fighter Tactical Ranger Disk CXXVII	18
Tie Fighter Tactical Ranger Disk CXXVIII	18
Tie Fighter Tactical Ranger Disk CXXIX	18
Tie Fighter Tactical Ranger Disk CXXX	18
Tie Fighter Tactical Ranger Disk CXXXI	18
Tie Fighter Tactical Ranger Disk CXXXII	18
Tie Fighter Tactical Ranger Disk CXXXIII	18
Tie Fighter Tactical Ranger Disk CXXXIV	18
Tie Fighter Tactical Ranger Disk CXXXV	18
Tie Fighter Tactical Ranger Disk CXXXVI	18
Tie Fighter Tactical Ranger Disk CXXXVII	18
Tie Fighter Tactical Ranger Disk CXXXVIII	18
Tie Fighter Tactical Ranger Disk CXXXIX	18
Tie Fighter Tactical Ranger Disk CXL	18
Tie Fighter Tactical Ranger Disk CXLI	18
Tie Fighter Tactical Ranger Disk CXLII	18
Tie Fighter Tactical Ranger Disk CXLIII	18
Tie Fighter Tactical Ranger Disk CXLIV	18
Tie Fighter Tactical Ranger Disk CXLV	18
Tie Fighter Tactical Ranger Disk CXLVI	18
Tie Fighter Tactical Ranger Disk CXLVII	18
Tie Fighter Tactical Ranger Disk CXLVIII	18
Tie Fighter Tactical Ranger Disk CXLIX	18
Tie Fighter Tactical Ranger Disk CL	18
Tie Fighter Tactical Ranger Disk CLI	18
Tie Fighter Tactical Ranger Disk CLII	18
Tie Fighter Tactical Ranger Disk CLIII	18
Tie Fighter Tactical Ranger Disk CLIV	18
Tie Fighter Tactical Ranger Disk CLV	18
Tie Fighter Tactical Ranger Disk CLVI	18
Tie Fighter Tactical Ranger Disk CLVII	18
Tie Fighter Tactical Ranger Disk CLVIII	18
Tie Fighter Tactical Ranger Disk CLIX	18
Tie Fighter Tactical Ranger Disk CLX	18
Tie Fighter Tactical Ranger Disk CLXI	18
Tie Fighter Tactical Ranger Disk CLXII	18
Tie Fighter Tactical Ranger Disk CLXIII	18
Tie Fighter Tactical Ranger Disk CLXIV	18
Tie Fighter Tactical Ranger Disk CLXV	18
Tie Fighter Tactical Ranger Disk CLXVI	18
Tie Fighter Tactical Ranger Disk CLXVII	18
Tie Fighter Tactical Ranger Disk CLXVIII	18
Tie Fighter Tactical Ranger Disk CLXIX	18
Tie Fighter Tactical Ranger Disk CLXX	18
Tie Fighter Tactical Ranger Disk CLXXI	18
Tie Fighter Tactical Ranger Disk CLXXII	18
Tie Fighter Tactical Ranger Disk CLXXIII	18
Tie Fighter Tactical Ranger Disk CLXXIV	18
Tie Fighter Tactical Ranger Disk CLXXV	18
Tie Fighter Tactical Ranger Disk CLXXVI	18
Tie Fighter Tactical Ranger Disk CLXXVII	18
Tie Fighter Tactical Ranger Disk CLXXVIII	18
Tie Fighter Tactical Ranger Disk CLXXIX	18
Tie Fighter Tactical Ranger Disk CLXXX	18
Tie Fighter Tactical Ranger Disk CLXXXI	18
Tie Fighter Tactical Ranger Disk CLXXXII	18
Tie Fighter Tactical Ranger Disk CLXXXIII	18
Tie Fighter Tactical Ranger Disk CLXXXIV	18
Tie Fighter Tactical Ranger Disk CLXXXV	18
Tie Fighter Tactical Ranger Disk CLXXXVI	18
Tie Fighter Tactical Ranger Disk CLXXXVII	18
Tie Fighter Tactical Ranger Disk CLXXXVIII	18
Tie Fighter Tactical Ranger Disk CLXXXIX	18
Tie Fighter Tactical Ranger Disk CXC	18
Tie Fighter Tactical Ranger Disk CXCI	18
Tie Fighter Tactical Ranger Disk CXCII	18
Tie Fighter Tactical Ranger Disk CXCIII	18
Tie Fighter Tactical Ranger Disk CXCIV	18
Tie Fighter Tactical Ranger Disk CXCV	18
Tie Fighter Tactical Ranger Disk CXCVI	18
Tie Fighter Tactical Ranger Disk CXCVII	18
Tie Fighter Tactical Ranger Disk CXCVIII	18
Tie Fighter Tactical Ranger Disk CXCIX	18
Tie Fighter Tactical Ranger Disk CC	18
Tie Fighter Tactical Ranger Disk CCI	18
Tie Fighter Tactical Ranger Disk CCII	18
Tie Fighter Tactical Ranger Disk CCIII	18
Tie Fighter Tactical Ranger Disk CCIV	18
Tie Fighter Tactical Ranger Disk CCV	18
Tie Fighter Tactical Ranger Disk CCVI	18
Tie Fighter Tactical Ranger Disk CCVII	18
Tie Fighter Tactical Ranger Disk CCVIII	18
Tie Fighter Tactical Ranger Disk CCIX	18
Tie Fighter Tactical Ranger Disk CCX	18
Tie Fighter Tactical Ranger Disk CCXI	18
Tie Fighter Tactical Ranger Disk CCXII	18
Tie Fighter Tactical Ranger Disk CCXIII	18
Tie Fighter Tactical Ranger Disk CCXIV	18
Tie Fighter Tactical Ranger Disk CCXV	18
Tie Fighter Tactical Ranger Disk CCXVI	18
Tie Fighter Tactical Ranger Disk CCXVII	18
Tie Fighter Tactical Ranger Disk CCXVIII	18
Tie Fighter Tactical Ranger Disk CCXIX	18
Tie Fighter Tactical Ranger Disk CCXX	18
Tie Fighter Tactical Ranger Disk CCXXI	18
Tie Fighter Tactical Ranger Disk CCXXII	18
Tie Fighter Tactical Ranger Disk CCXXIII	18
Tie Fighter Tactical Ranger Disk CCXXIV	18
Tie Fighter Tactical Ranger Disk CCXXV	18
Tie Fighter Tactical Ranger Disk CCXXVI	18
Tie Fighter Tactical Ranger Disk CCXXVII	18
Tie Fighter Tactical Ranger Disk CCXXVIII	18
Tie Fighter Tactical Ranger Disk CCXXIX	18
Tie Fighter Tactical Ranger Disk CCXXX	18
Tie Fighter Tactical Ranger Disk CCXXXI	18
Tie Fighter Tactical Ranger Disk CCXXXII	18
Tie Fighter Tactical Ranger Disk CCXXXIII	18
Tie Fighter Tactical Ranger Disk CCXXXIV	18
Tie Fighter Tactical Ranger Disk CCXXXV	18
Tie Fighter Tactical Ranger Disk CCXXXVI	18
Tie Fighter Tactical Ranger Disk CCXXXVII	18
Tie Fighter Tactical Ranger Disk CCXXXVIII	18
Tie Fighter Tactical Ranger Disk CCXXXIX	18
Tie Fighter Tactical Ranger Disk CCXL	18
Tie Fighter Tactical Ranger Disk CCXLI	18
Tie Fighter Tactical Ranger Disk CCXLII	18
Tie Fighter Tactical Ranger Disk CCXLIII	18
Tie Fighter Tactical Ranger Disk CCXLIV	18
Tie Fighter Tactical Ranger Disk CCXLV	18
Tie Fighter Tactical Ranger Disk CCXLVI	18
Tie Fighter Tactical Ranger Disk CCXLVII	18
Tie Fighter Tactical Ranger Disk CCXLVIII	18
Tie Fighter Tactical Ranger Disk CCXLIX	18
Tie Fighter Tactical Ranger Disk CCL	18
Tie Fighter Tactical Ranger Disk CCLI	18
Tie Fighter Tactical Ranger Disk CCLII	18
Tie Fighter Tactical Ranger Disk CCLIII	18
Tie Fighter Tactical Ranger Disk CCLIV	18
Tie Fighter Tactical Ranger Disk CCLV	18
Tie Fighter Tactical Ranger Disk CCLVI	18
Tie Fighter Tactical Ranger Disk CCLVII	18
Tie Fighter Tactical Ranger Disk CCLVIII	18
Tie Fighter Tactical Ranger Disk CCLIX	18
Tie Fighter Tactical Ranger Disk CCLX	18
Tie Fighter Tactical Ranger Disk CCLXI	18
Tie Fighter Tactical Ranger Disk CCLXII	18
Tie Fighter Tactical Ranger Disk CCLXIII	18
Tie Fighter Tactical Ranger Disk CCLXIV	18
Tie Fighter Tactical Ranger Disk CCLXV	18
Tie Fighter Tactical Ranger Disk CCLXVI	18
Tie Fighter Tactical Ranger Disk CCLXVII	18
Tie Fighter Tactical Ranger Disk CCLXVIII	18
Tie Fighter Tactical Ranger Disk CCLXIX	18
Tie Fighter Tactical Ranger Disk CCLXX	18
Tie Fighter Tactical Ranger Disk CCLXXI	18
Tie Fighter Tactical Ranger Disk CCLXXII	18
Tie Fighter Tactical Ranger Disk CCLXXIII	18
Tie Fighter Tactical Ranger Disk CCLXXIV	18
Tie Fighter Tactical Ranger Disk CCLXXV	18
Tie Fighter Tactical Ranger Disk CCLXXVI	18
Tie Fighter Tactical Ranger Disk CCLXXVII	18
Tie Fighter Tactical Ranger Disk CCLXXVIII	18
Tie Fighter Tactical Ranger Disk CCLXXIX	18
Tie Fighter Tactical Ranger Disk CCLXXX	18
Tie Fighter Tactical Ranger Disk CCLXXXI	18
Tie Fighter Tactical Ranger Disk CCLXXXII	18
Tie Fighter Tactical Ranger Disk CCLXXXIII	18
Tie Fighter Tactical Ranger Disk CCLXXXIV	18
Tie Fighter Tactical Ranger Disk CCLXXXV	18
Tie Fighter Tactical Ranger Disk CCLXXXVI	18
Tie Fighter Tactical Ranger Disk CCLXXXVII	18
Tie Fighter Tactical Ranger Disk CCLXXXVIII	18
Tie Fighter Tactical Ranger Disk CCLXXXIX	18
Tie Fighter Tactical Ranger Disk CCXC	18
Tie Fighter Tactical Ranger Disk CCXCI	18
Tie Fighter Tactical Ranger Disk CCXCII	18
Tie Fighter Tactical Ranger Disk CCXCIII	18
Tie Fighter Tactical Ranger Disk CCXCIV	18
Tie Fighter Tactical Ranger Disk CCXCV	18
Tie Fighter Tactical Ranger Disk CCXCVI	18
Tie Fighter Tactical Ranger Disk CCXCVII	18
Tie Fighter Tactical Ranger Disk CCXCVIII	18
Tie Fighter Tactical Ranger Disk CCXCIX	18
Tie Fighter Tactical Ranger Disk CCC	18
Tie Fighter Tactical Ranger Disk CCCI	18
Tie Fighter Tactical Ranger Disk CCCII	18
Tie Fighter Tactical Ranger Disk CCCIII	18
Tie Fighter Tactical Ranger Disk CCCIV	18
Tie Fighter Tactical Ranger Disk CCCV	18
Tie Fighter Tactical Ranger Disk CCCVI	18
Tie Fighter Tactical Ranger Disk CCCVII	18
Tie Fighter Tactical Ranger Disk CCCVIII	18
Tie Fighter Tactical Ranger Disk CCCIX	18
Tie Fighter Tactical Ranger Disk CCCX	18
Tie Fighter Tactical Ranger Disk CCCXI	18
Tie Fighter Tactical Ranger Disk CCCXII	18
Tie Fighter Tactical Ranger Disk CCCXIII	18
Tie Fighter Tactical Ranger Disk CCCXIV	18
Tie Fighter Tactical Ranger Disk CCCXV	18
Tie Fighter Tactical Ranger Disk CCCXVI	18
Tie Fighter Tactical Ranger Disk CCCXVII	18
Tie Fighter Tactical Ranger Disk CCCXVIII	18
Tie Fighter Tactical Ranger Disk CCCXIX	18
Tie Fighter Tactical Ranger Disk CCCXX	18
Tie Fighter Tactical Ranger Disk CCCXXI	18
Tie Fighter Tactical Ranger Disk CCCXXII	18
Tie Fighter Tactical Ranger Disk CCCXXIII	18
Tie Fighter Tactical Ranger Disk CCCXXIV	18
Tie Fighter Tactical Ranger Disk CCCXXV	18
Tie Fighter Tactical Ranger Disk CCCXXVI	18
Tie Fighter Tactical Ranger Disk CCCXXVII	18
Tie Fighter Tactical Ranger Disk CCCXXVIII	18
Tie Fighter Tactical Ranger Disk CCCXXIX	18
Tie Fighter Tactical Ranger Disk CCCXXX	18
Tie Fighter Tactical Ranger Disk CCCXXXI	18
Tie Fighter Tactical Ranger Disk CCCXXXII	18
Tie Fighter Tactical Ranger Disk CCCXXXIII	18
Tie Fighter Tactical Ranger Disk CCCXXXIV	18
Tie Fighter Tactical Ranger Disk CCCXXXV	18
Tie Fighter Tactical Ranger Disk CCCXXXVI	18
Tie Fighter Tactical Ranger Disk CCCXXXVII	18
Tie Fighter Tactical Ranger Disk CCCXXXVIII	18
Tie Fighter Tactical Ranger Disk CCCXXXIX	18
Tie Fighter Tactical Ranger Disk CCCXL	18
Tie Fighter Tactical Ranger Disk CCCXLI	18
Tie Fighter Tactical Ranger Disk CCCXLII	18
Tie Fighter Tactical Ranger Disk CCCXLIII	18
Tie Fighter Tactical Ranger Disk CCCXLIV	18
Tie Fighter Tactical Ranger Disk CCCXLV	18
Tie Fighter Tactical Ranger Disk CCCXLVI	18
Tie Fighter Tactical Ranger Disk CCCXLVII	18
Tie Fighter Tactical Ranger Disk CCCXLVIII	18
Tie Fighter Tactical Ranger Disk CCCXLIX	18
Tie Fighter Tactical Ranger Disk CCCL	18
Tie Fighter Tactical Ranger Disk CCCLI	18
Tie Fighter Tactical Ranger Disk CCCLII	18
Tie Fighter Tactical Ranger Disk CCCLIII	18
Tie Fighter Tactical Ranger Disk CCCLIV	18
Tie Fighter Tactical Ranger Disk CCCLV	18
Tie Fighter Tactical Ranger Disk CCCLVI	18
Tie Fighter Tactical Ranger Disk CCCLVII	18
Tie Fighter Tactical Ranger Disk CCCLVIII	18
Tie Fighter Tactical Ranger Disk CCCLIX	18
Tie Fighter Tactical Ranger Disk CCCLX	18
Tie Fighter Tactical Ranger Disk CCCLXI	18
Tie Fighter Tactical Ranger Disk CCCLXII	18
Tie Fighter Tactical Ranger Disk CCCLXIII	18
Tie Fighter Tactical Ranger Disk CCCLXIV	18
Tie Fighter Tactical Ranger Disk CCCLXV	18
Tie Fighter Tactical Ranger Disk CCCLXVI	18
Tie Fighter Tactical Ranger Disk CCCLXVII	18
Tie Fighter Tactical Ranger Disk CCCLXVIII	18
Tie Fighter Tactical Ranger Disk CCCLXIX	18
Tie Fighter Tactical Ranger Disk CCCLXX	18
Tie Fighter Tactical Ranger Disk CCCLXXI	18
Tie Fighter Tactical Ranger Disk CCCLXXII	18
Tie Fighter Tactical Ranger Disk CCCLXXIII	18
Tie Fighter Tactical Ranger Disk CCCLXXIV	18
Tie Fighter Tactical Ranger Disk CCCLXXV	18
Tie Fighter Tactical Ranger Disk CCCLXXVI	18
Tie Fighter Tactical Ranger Disk CCCLXXVII	18
Tie Fighter Tactical Ranger Disk CCCLXXVIII	18
Tie Fighter Tactical Ranger Disk CCCLXIX	18
Tie Fighter Tactical Ranger Disk CCCLXXX	18
Tie Fighter Tactical Ranger Disk CCCLXXXI	18
Tie Fighter Tactical Ranger Disk CCCLXXXII	18
Tie Fighter Tactical Ranger Disk CCCLXXXIII	18
Tie Fighter Tactical Ranger Disk CCCLXXXIV	18
Tie Fighter Tactical Ranger Disk CCCLXXXV	18
Tie Fighter Tactical Ranger Disk CCCLXXXVI	18
Tie Fighter Tactical Ranger Disk CCCLXXXVII	18
Tie Fighter Tactical Ranger Disk CCCLXXXVIII	18
Tie Fighter Tactical Ranger Disk CCCLXXXIX	18
Tie Fighter Tactical Ranger Disk CCCXC	18
Tie Fighter Tactical Ranger Disk CCCXCI	18
Tie Fighter Tactical Ranger Disk CCCXCII	18
Tie Fighter Tactical Ranger Disk CCCXCIII	18
Tie Fighter Tactical Ranger Disk CCCXCIV	18
Tie Fighter Tactical Ranger Disk CCCXCV	18
Tie Fighter Tactical Ranger Disk CCCXCVI	18
Tie Fighter Tactical Ranger Disk CCCXCVII	18
Tie Fighter Tactical Ranger Disk CCCXCVIII	18
Tie Fighter Tactical Ranger Disk CCCXCIX	18
Tie Fighter Tactical Ranger Disk CD	18
Tie Fighter Tactical Ranger Disk CDI	18
Tie Fighter Tactical Ranger Disk CDII	18
Tie Fighter Tactical Ranger Disk CDIII	18
Tie Fighter Tactical Ranger Disk CDIV	18
Tie Fighter Tactical Ranger



Papyrus Returns to the Winner's Circle

An Interview With David Kaemmer Of Papyrus Design Group

by Gordon Goble

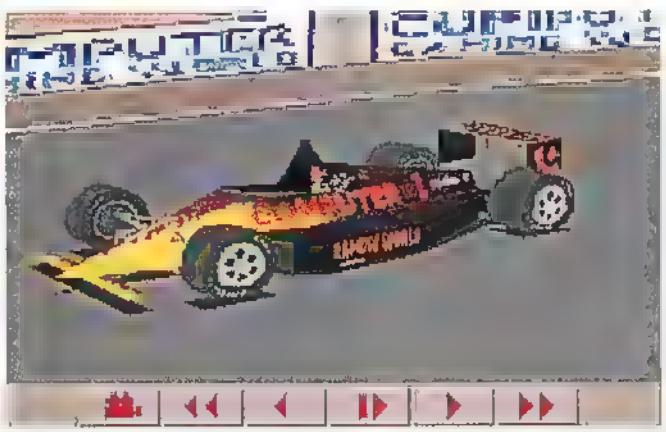
The 1989 release of "Indianapolis 500: The Simulation" signaled a turning point in driving simulations. There weren't a lot of "bells and whistles," but for the first time on a personal computer, one could experience a little of the true feel of an open-wheeled race car. For thousands of armchair Andrettis, Indy was as close as they could get to strapping on a helmet and planting the right foot to the floor. Arcade-style it was not: the view was from the cockpit, there was but a single track (the Indianapolis oval), lap times were accurate, and the on-track competition looked like they would from an ABC in-car camera.

More importantly, the drive was real. Each corner of the Indianapolis oval had to be perfectly carved — the slightest misjudgment would result in the stinging smack of a wall or that helpless slip-slidin' away feeling of the in-field grass. Just navigating the car once around the Indy course at full acceleration was an accomplishment in itself.

After a certain degree of driving proficiency had been attained, physical alterations to the vehicle could be made in the pit lane, and setting a car to its ultimate potential became a skill in itself. Indy was, and is, a subtle exercise demanding maximum concentration, and extracting addiction in return.

Twenty-nine year old David Kaemmer is the mastermind behind this celebrated simulation, and a founder of the Papyrus Design Group. Today, despite continued Indy sales four years into its life span and enviable customer satisfaction, Kaemmer is ready to take the stunning simplicity of the original game one step further. We managed to flag down the fast-moving but amiable Kaemmer, and brought him in for a quick CGW pit stop.

ON INDY 500 - THE SIMULATION...



CGW: *Indy 500* brought an innovative realism to driving simulations. What were you able to do that the other guys weren't in terms of programming, game design, etc.?

Kaemmer: The key to *Indy's* realism is that it contains a very complex and accurate physics model. I spent a great deal of time researching race car dynamics, and the model includes hundreds of variables that influence the car's handling, just as in real life. Other games seem to use the joystick deflection to do very high level calculations — the car's direction and speed are simple functions of the joystick position. In our model, when you move the joystick, it does no more than change the steering angle of the front wheels. Likewise, the throttle and brake inputs are converted to pedal deflections. Any speed or directional changes are then calculated (many times per second) using gobs of Newtonian mechanics. That makes it feel very much like a real car. Tuning the chassis by changing the myriad wing, tire, suspension, and gearbox settings also alters the car's speed and handling just as the equivalent changes do in real life.

CGW: How long did it take to put all this into a workable package?

Kaemmer: About two years for the *Indy* PC version plus another eight or nine months for the Amiga version.

CGW: Do you feel you underestimated the number of people interested in the subtleties of driving a "real" race car over other "arcade" style games on the market at the time of *Indy's* release?

Kaemmer: To tell you the truth, I didn't give it much thought at the time I was developing it. I thought it would sell well because I had so much fun playing it!

CHIPS & BITS inc.

FREE GAME WITH YOUR $75 ORDER

Shipping to US,FPO,AK,HI,APO & PRO $4 per order. Air Mail to Canada $6 per order. Canada 1 Item $2 per additional item.
2 Business Day Air US $6 per order; FPO, HI $12.1st item, $2 ea. add'l; AK $18.1st item $2 ea add'l. Handling $1 per shipment.
Europe, S. America Air Mail $10.1st item, $4 per add'l. $1 per shipment.

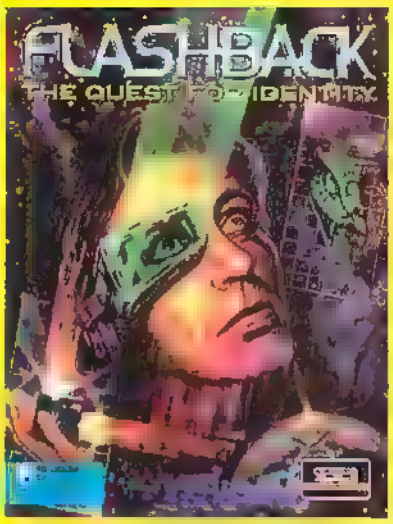
PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM HARDWARE

Acoustic Research P22	$79
Acoustic Research P622	$239
AdLib Sound Card	$39
Adlib Gold Sound Card	$159
Advanced Gravis Ultrasound	$139
Champ Joystick	$19
Flight Stick Joystick	$36
Game Card 3 Automatic	$39
Labtec 105 Powered Speaker	$24
Media Concept Sound Card	$72
PC Symphony Sound Card	$37
Pilot Control Stand	$20
Pro Audio Spectrum 16	$179
Quickshot 123 Joystick	$12
Sony SRS9 Speakers	$20
Sound Blaster 16	$219
Sound Blaster Deluxe	$89
Sound Blaster MM Upgd Kit	$499
Sound Blaster Pro Basic	$129
Sound Blaster Pro Deluxe	$129
Sound Galaxy BX2	$65
Sound Galaxy NX2	$89
Sound Galaxy NX Pro	$125
Snd Galaxy NX Pro 16/scsi	$169
Snd Galaxy NX Pro MM Kit	$450
Sound Machine	$99
Thrustmaster FCS	$67
Thrustmaster FCS Pro	$99
Thrustmaster Rudder CS	$99
Thrustmaster Weapons CS	$72
Thrustmaster WCS Mark 2	$98

IBM CD ROM

12 Roads to Gettsyburg WIN	$48
7th Guest	$56
A Christmas Carol	$18
Advent Willie Beamish	$45
Adventures of Brad Stallion	$39
Aesop's Multimedia Fables	$30
Barney Bear Goes to School	$23
Barney Bear Goes to Space	$23
Battle Chess W.N & DOS	$46
Buzz Aldrin Race Space CD	$59
California Travel	$12
Campaign	$35
Capstone Game Collection	$45
Chessmaster 3000	$46
Conan	$21
Conquests Robin Hood	$42
Curse of Enchantia	$26
Cyber Space	$38
Don Quixote	$32
Dune	$35
EcoQuest Search for Cetus	$42
El Grito Del Jaguar WIN	$46
Eye of the Beholder 3	$48
Fascination WIN	$39
Goler's Winkel Advet WIN	$35
Guy Spy	$29
Impressionist Sources WIN	$69
Indy Jones Fate Atlantis	$52
Interactive Storytime Vol 1	$30
Interactive Storytime Vol 2	$30
Interactive Storytime Vol 3	$30
Jack and the Beanstalk	$34
Jones in The Fast Lane WIN	$42
Jungle Book Win	$34
King Quest 6 Rom	$48
King's Quest 5 WIN	$42
King's Ransom	$38
Laura Bow 2	$42
Legend of Kyrandia	$49
Library of Art, Renaissance	$60
Loom	$48
Lost Treasures Infocom 2	$46
Lost Treasures of Infocom	$46
Mantis Experimental Fighter	$45
Multimedia, Vivaldi WIN	$34
Omar Sharif Bridge	$46



'FLASHBACK' combines an intricate plot, exciting music score, sizzling sound effects, and dynamite action. Features incredibly subtle and fluid movement with smooth animation at 24 frames a second, 200 different game screens, dozens of puzzles, pan & zoom effects, and over 75 fully animated cinematics. **$33**

'CARRIERS AT WAR' brings to life six crucial carrier battles of WWII, Pearl Harbor, Coral Sea, Midway, Eastern Shores, Santa Cruz, and Great Mananas Turkey Shoot. Seek out and destroy enemy carriers, fleets, air forces. Features hundreds of individually modeled ships and aircraft from that period. **$37**

'SOUND GALAXY NX PRO 16' supports the 5 most popular sound cards. Features CD ROM interface, 16 Bit stereo playback with 20 voices at up to 14.4 KHz, volume control, midi interface, game port, 4 watt amp, and software setup. **$169**

Visa & MC Accepted. CODs $6. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. **All Sales Final.** *SEE LAST PAGE FOR DETAILS

IBM CD ROM

Putt Putt Joins the Parade	$42
Return of the Phatom	$42
Rodney's Funscreen	$46
Secret Monkey Island	$39
Secret Weap Luftwaffe	$48
Sherlock Holmes Consul Det	$44
Shuttle	$24
Software Toolworks Reference	$80
Space Quest 4	$39
Space Quest 4 WIN	$42
Spirit of Excalibur	$32
Star Child	$32
Star Trek 25Anv	$46
Stellar 7 W N	$42
Talking Classic Tales	$60
Talking Jungle Safari	$60
Team Yankee 2	$29
Ultima Bundle	$59
Ultima Underworld 1&2	$52
Velveteen Rabbit Childrens	$58
Where in the World Deluxe	$66
White Horse Child	$32
Wing Commander 1 Deluxe	$48
Wing Commander/Ultima 6	$57
Wing Commandr/Ultima UW	$59
Wolf Pack	$39
Wrath of the Demon	$29

IBM ADVENTURE

Advent Willie Beamish	$24
Advent Willie Beamish 2	$39
All Dogs go to Heaven	$17
Alone in the Dark	$36
Amazon	$36
Attack Pack	$42
B.A.T.	$14
Bloodstone	$36
Blue Force, Next of Kin	$45
Cadaver	$27
Castle Wolfsin Spear Destiny	$37
Chamber Sci-Mutant Prstss	$25
Coaster	$32
Conquests Robin Hood VGA	$36
Conspiracy Deadlock Files	$34
Countdown	$37
Covert Action	$12
Crime Does Not Pay	$19
Crime Wave	$37
Cruise for a Corpse	$32
Cyber Race	$42
Cybercon 3	$29
Dark Half	$10
Dark Side	$28
Day of the Tentacle	$39
Deja Vu 1&2 WIN	$26
Demon's Gate	$32
Dog Eat Dog	$32
Dominus	$39
Don't Go Alone	$6
Dragon's Sphere	$42
Earthrise	$9
Elf	$24
Epic	$32
Eric the Unready	$38
Eternam	$36
Flashback	$33
Fred Pharkas Frontier Pharm	$42
Free DC	$9
Future Wars	$9
Galleons of Glory	$24
Gambit	$38
Gateway	$29
Godfather	$29
Gold Rush	$15
Grail Quest	$17
HUMANS	$21
Havoc for Hire	$42
Heart of China VGA	$19
Heaven and Earth	$32

IBM ADVENTURE

Heimdall	$17
Hired Guns	$32
Hook	$32
Inca	$42
Indy Jones 4 Fate Atlantis	$36
Jack the Ripper	$38
KGB	$17
King's Quest 5	$36
King's Quest 6	$45
King's Ransom	$38
Kronolog. Nazi Paradox	$42
L.A. Law	$34
Laffer Utilities WIN	$24
Land of Lore	$36
Laura Bow 2	$36
Leather Goddesses	$12
Leather Goddesses 2	$42
Legend of Kyrandia	$35
Leisure Suit Larry 1 VGA	$15
Leisure Suit Larry 5	$34
Leisure Suit Larry Bundle 1	$39
Loom	$19
Lords of the Rising Sun	$34
Lost Files Sherlock Holmes	$44
Lost Treasures of Infocom	$42
Lost Treasures of Infocom 2	$29
Magnetic Scrolls Bundle	$21
Martian Memorandum	$29
Max Pac	$22
Out of this World	$36
Plan 9 from Outer Space	$31
Police Quest 1 VGA	$24
Police Quest 3	$36
Prince of Persia	$25
Prince of Persia 2	$45
Return of the Phantom	$42
Return to Zork	$38
Rex Nebular Cos Gen Ben	$39
Rex Nebular Master Edition	$52
Riftwar Legacy	$39
Ringworld	$36
Rise of the Dragon	$34
Rome, Pathway to Power	$32
Screen Antics WIN	$24
Search for the King	$24
Secret Monkey Island	$23
Secret Monkey Island 2	$38
Sex Olympics	$19
Sex Vixens from Space	$12
Shadowgate WIN	$34
Shogun	$12
Sierra Adventure Bundle 1	$39
Space Quest 1 VGA	$16
Space Quest 4	$36
Space Quest 5	$39
Space Quest Bundle	$36
Speilcasting 101	$19
Speilcasting 201	$36
Speilcasting 301 Spring Brk	$34
Star Trek 25th Anlv	$36
Star Trek Next Generation	$46
Stellar 7	$21
Terminator 2029	$42
The Prophecy	$36
The Train	$6
Time Quest	$12
Trolls	$7
Uninvited	$6
Uninvited WIN	$34
Walker	$32
War in Middle Earth	$12
Warriors of Legend	$19
Where in America's Past	$37
Where in Europe is Carmen	$29
Where in Time Carmen	$32
Where in USA is Carmen	$29
Where in USA is Carmen Dlx	$45
Where in World Carmen	$32
Where World Carmen Dlx	$52
Wonderland	$16
Zool	$34

If anything, I probably overestimated how much interest there would be in it. Flight simulators usually do very well, and I have always thought of *Indy* as being *Flight Simulator* on a racetrack. I did underestimate the number of crazy lunatics (myself included) who would drive a 500 mile race. I put that capability in figuring that there was no harm in making it possible, but nobody would actually do it. Of course, then I had to try it in order to say that I had done it. In doing so, I discovered that driving the 500 miler was the most fun activity in the game (although you can get a wicked case of "joystick elbow").

CGW: How much time did you spend on research at "The Brickyard"? Is the track a completely faithful representation of the real thing?

Kaemmer: The only research I did *at* the "Brickyard" was visiting the museum and riding around the track in a bus. I did pore through a lot of books, maps, and video footage in order to get the dimensions of the track and the location of all the grandstands correct. The track in the game is a faithful representation of the track as it was in 1988. In 1989, the real speedway was resurfaced (eliminating the bumpiness on the pit lane), then in 1990 some VIP boxes were added along the inside of the front straight. So now, the original simulation is a bit dated, I'm afraid.

CGW: Are you aware of the obvious *Indy 500* "Game-Within-A-Game" that consists of discovering just how many cars can be destroyed in a single melee?

Kaemmer: That's gruesome. I'm shocked that people would do such a thing. Twenty-nine was my best. How about trying to win a 10 lap race by crashing out all the other cars before someone else wins? On a kinder, gentler note: Best single lap speed — I heard on **Compuserve** that someone turned a 243.10 mph lap, which is, as far as I know, the all-time simulation record. Another good game for those who have mastered the simulation: What's the lowest boost at which you can win the 500 miler (or the 150, 60, or 25)? A friend of mine claims to have won the ten lap race with a boost setting of 1, although I'm not sure I believe him...

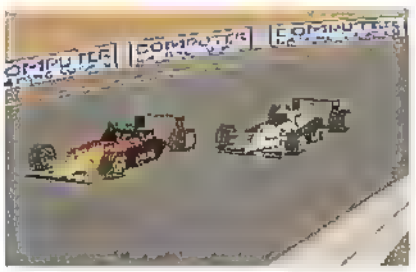
ON PAPYRUS DESIGN GROUP...

CGW: What is your official title with Papyrus?

Kaemmer: Co-founder and Vice President, Technology.

CGW: Would you like to mention any other people who deserve recognition for their work on this game?

Kaemmer: On the original *Indy 500*, Richard Garcia did a significant amount of programming, Rob Hubbard at EA did a fantastic job on the Adlib and Roland sound drivers (Indy was one of the first games, if not *the* first, that used those boards for sound effects), and my wife Althea went beyond the call of duty during its development. (You try putting a one week old baby to sleep with the scream of doppler-shifting Indy engines blaring out of the Roland MT-32 in the next room.)



On the new game, John Wheeler is my primary programming assistant, and is doing a fabulous job with the instant replays and the whole user interface. Adam Levesque is building the tracks and 3D objects, and Doug McCartney is drawing the texture maps and menu artwork. They all deserve a lot of credit, doing a great job and maintaining a good humor, all while working with a perfectionist like myself.

CGW: Was there a Papyrus before *Indy 500*?

Kaemmer: Yes, but not long before. Omar Khudari and I formed Papyrus in August 1987, and I started work on *Indy* in January, 1988.

CGW: So, was Papyrus formed in order to develop *Indy 500*?

Kaemmer: We did form Papyrus with the intention of developing games, although *Indy* wasn't in our plans at that point. We traveled to San Francisco and pitched a few game ideas to EA in '87, and we mentioned the possibility of doing an Indy 500 game. Unbeknownst to us, Rich Hilleman at EA was simultaneously looking for someone to do an Indy 500 game, and so the ball started rolling.

CGW: What has Papyrus done between *Indy 500* and this new game, and what do you do other than game development?

Kaemmer: We do a lot of contract programming. We've done educational software, business productivity software, systems software, you name it. Our focus is on projects which require technologies similar to those in game programming: high speed graphics, sound, any type of program in which a myriad of complex problems need to be solved. We continue to do game development mainly because we enjoy it, but also because it's a good way to keep our technologies current.

CGW: Were you pleased with the arrangement between yourself and Electronic Arts pertaining to *Indy 500*? Did EA do a satisfactory job marketing the game?

Kaemmer: At the time it was a very good deal. We were an unknown quantity to EA (and to just about everybody), so they gave us a big break. Financially for us it's been about a break-even, but the game has helped our visibility, since a lot of people in the industry know it and like it.

Indy 500 never sold as well as we and EA thought it would, but I don't think EA's marketing can be faulted. There are probably some things EA would do differently if they had marketed the game again, but they had a though sell. There is only one track in the game, and an oval at that! It's difficult to sell the game's realistic physics when every other Tom, Dick and Harry with a driving game calls theirs "the most realistic driving game ever." I think game buyers become fairly skeptical about the inflated claims that they see all the time. So naturally just about everyone who picks up the box thinks "*Test Drive* on an oval... no thanks." EA drummed up a lot of publicity about the game; it was featured in stories on ESPN and Entertainment Tonight, and was reviewed by the major auto magazines, and they all loved it.

ON THE NEW PRODUCT...

CGW: When will the new product be shipping? What is its official name, and what is the projected price?

Kaemmer: We haven't yet decided on

CHIPS & BITS inc

FREE GAME WITH YOUR $75 ORDER*

Shipping to US,FPO,APO & PO Boxes $4 per order; Air Mail to Canada $6 per order; Canada $10 per order; 1 Day Air $25 per order; 2 Business Day Air US $6 per order; PR, HI $12 1st Item $2 ea add'l; AK $12 1st Item $4 ea add'l; Handling $1 per shipment. Europe, S. America Air Mail $10 1st Item $4 ea add'l; Australia, Asia Air Mail $12 1st Item $4 ea add'l; Hardware $4 per shipment

PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM ROLE PLAYING

Might & Magic 3	$29
Might & Magic 3 Char Edit	$16
Might&Magic 4 Clouds Xeen	$34
Might&Magic 4 Char Edit	$16
Might&Magic 5 D Side Xeen	$42
Mines of Titan	$9
Murder	$29
Obitus No Shirt	$27
Pirates	$8
Pirates Gold	$42
Planet's Edge	$34
Planet's Edge Char Ed	$15
Pools of Darkness	$38
Protostar	$42
Questron 2	$12
Ragnarok	$34
Realms of Arkania	$37
Rings of Medusa	$24
Savage Empire	$34
Savage Empire Char Edit	$16
Sea Rogue	$29
Secret Silver Blades	$15
Secret Silver Blades Char Ed	$16
Sentinel Worlds 1	$9
Sentinel Worlds 1 Char Edit	$16
Shadow Sorcerer	$9
Shadowlands	$29
Shadows of Mordor	$19
Sleeping Gods Lie	$19
Sorcerian	$15
Space 1889	$12
Space 1889 Char Edit	$16
Space Hulk	$38
Space Inc	$34
Space Rogue	$30
Space Rogue Char Edit	$16
Spacewrecked	$19
Spelcraft: Aspect of Valor	$38
SpellJammer:Pirates Rlm Sp	$38
Spelcraft:Aspect of Valor	$38
Spirit of Excalibur	$9
Star Saga 2	$19
Starflight 1 or 2	$17
Stonekeep	$54
Summoning	$38
Sword of the Samurai	$12
Tales Magic:Prophecy Shdw	$29
Tale Magic: Proph Shad CE	$16
Tangled Tales	$21
Terran Envoy	$12
Third Courier	$6
Times of Lore	$28
Treasures Savage Frontier	$32
Treasure Savage Frntier CE	$15
Trilogy	$15
Tunnels & Trolls	$12
Twilight 2000 VGA	$24
Ultima 6 False Prophet	$19
Ultima 6 Char Edit	$16
Ultima 7 Black Gate	$48
Ultima 7 Char Ed	$16
Ultima 7 Forge of Virtue	$18
Ultima 7.5 Serpent Isle	$48
Ultima Trilogy	$39
Ultima Trilogy 2	$48
Ultima Uworld Stygian Abyss	$48
Ultima UW Styg Abyss CE	$15
Ultima Uworld 2 Labyrinth	$48
Uncharted Waters	$42
Unlimited Adventures	$32
Veil of Darkness	$37
Vengeance of Excalibur	$16
War of the Lance	$9
Wasteland Char Edit	$16
Waxworks	$29
Wizardry Trilogy	$32
Wizardry (1-3) Char Edit	$16
Wizardry Cosmic Forge	$34
Wizardry Cosmic Forge CE	$16
Wizardry 7 Crusaders	$39
Wizadry 7 Crusaders Chr Ed	$16

'STRIKE COMMANDER' is a flight simulator of uncomprising quality and realism, interwoven with a gripping cinematic story. This release marks the completion of 2 years of intense software development using Origin's Realspace graphics system. Fly over extremely detailed enemy territory to deliver your cargo. **$48**

'AMAZON' recaptures the fun and excitement of the 1950's drive-in movies. Travel to unexplored regions of the Amazon, fight 10 foot ants, and find emeralds stolen by Cortez. Amazing cinematic effects such as multiple camera angles, flashbacks, zooms, pans, and fades. Features full digitized voices & sound effects. **$36**

DREADNOUGHTS accurately models the looks, specifications and tactics of fighting fleets during the great age of the battleship. Includes 7 scenarios such as: Coronel (1914), Falklands (1914), Jutland (1916) and Dogger Bank (1915). Features a menu interface for entering commands, external 3D view, & hidden movement. **$39**

Visa & MC Accepted. CODs $6. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. **All Sales Final.** *SEE LAST PAGE FOR DETAILS

IBM HINT BOOKS

688 Attack Sub	$10
A-Train	$16
Advent Willie Beamish	$10
Altered Destiny	$10
Bard's Tale 1-3 Each	$10
Black Cauldron	$10
Blue Force: Next of Kin	$10
Buck Rogers Countdown	$10
Castle of Dr Brain	$10
Champions of Krynn	$10
Civilization	$16
Codename Iceman	$10
Colonel's Bequest	$10
Conquests Robin Hood	$10
Conquests of Camelot	$10
Countdown	$10
Curse of the Azure Bonds	$10
Dark Queen of Krynn	$10
Darklands	$14
Darkspyre	$10
Death Knights of Krynn	$10
Dragon Wars	$10
Dragons of Flame	$8
Drakkhen	$10
Dungeon Master	$10
Dynamix Great War Planes	$16
EcoQuest Search For Cetus	$10
Elvira 2 Jaws of Cerberus	$10
Elvira Mistress Dark	$10
Eye of the Beholder	$10
Eye of the Beholder 2	$12
Eye of the Beholder 3	$10
Fred Pharkas Fron Pharm	$8
Free DC	$10
Gateway Savage Frontier	$10
Global Conquest Strat w/disk	$21
Gobliiins	$10
Gold Rush	$10
Gunship 2000	$16
Hard Nova	$10
Harpoon	$16
Heart of China	$10
Hero's Quest 1-3 Each	$10
Hillstar	$8
Immortal	$10
Indi Jones 4 Fate Atlantis	$10
Island Of Dr Brain	$10
Jetfighter 2.0	$16
King's Quest 1-6 Each	$10
Knights of Legend	$10
Laura Bow 2 HintBook	$10
Leisure Suit Larry 1-5 Each	$10
Lemmings w/disk	$21
Loom	$10
Lord of the Rings V1	$10
Lord of the Rings V2	$6
Lost in LA	$10
LucasArts Adventure Book	$16
LucasArts Air Combat Stratg	$16
Magic Candle 2 or 3	$10
Magic Candle 3	$10
Manhunter New York	$10
Manhunter San Francisco	$10
Maniac Mansion	$10
Matrix Cubed	$10
Might & Magic 1	$10
Might & Magic 1&2	$16
Might & Magic 2	$12
Might & Magic 3-5 Each	$16
Off Book Leisure Suit Larry	$12
Off Book of Ultima 2nd Ed	$15
Off Gde Roger Wilco Space	$12
Off Guide King's Quest 2nd	$10
Off Book of Police Quest	$12
Patriot	$16
Planet's Edge	$16
Police Quest 1-3 Each	$10
Pool of Radiance	$10
Pools of Darkness	$12
Populous 1 & 2 Offic Stratgy	$16
Power Monger Strategy	$16

IBM HINT BOOKS

Powermonger	$10
Quest For Clues 2-5 Each	$21
Quest for Glory Strategy Gd	$19
RUNS Issue #1-19 Each	$6
Railroad Tycoon	$10
Rex Nebular Cos Gen Ben	$14
Rise of the Dragon	$10
Savage Empire	$10
Search for the King	$10
Secret Monkey Island 1 or 2	$10
Secret Silver Blades	$10
Sentinel Worlds 1	$10
Shadow Sorcerer	$10
Simearth	$16
Simcity & Simearth	$20
Simlife Official Strategy	$16
Space Quest 1-4 Each	$10
Spellcasting 101 Official	$10
Spellcasting 201	$10
Star Trek 25th Anniv	$10
Starflight 1 or 2	$10
Strategy Plus Issue 12-30 Ea	$5
Strike Commander Official	$16
Stunt Island	$16
Summoning	$16
Tales Magic Prophecy Shdw	$12
Time Quest	$10
Treasures Savage Frontier	$10
Tunnels & Trolls	$16
TurboGrafx 16 Secrets	$10
Ultima 4-6 Each	$10
Ultima 7	$12
Ultima 7 and Underworlds	$16
Ultima 7.5 Balancing Scales	$16
Ultima Avatar Adventures	$16
Ultima U Stygian Abyss	$12
Ultima Underworld 2	$12
V Victory	$16
Wasteland	$10
Wizardry Cosmic Forge	$12
Wizardry 7	$16
Yeager Air Combat	$16

IBM WARGAMES

Action North Atlantic	$26
Action off River Platte	$26
Air Raid Pearl Harbour	$22
Ambush at Sonnor	$42
American Civil War V1-3 Ea	$22
Banzai	$12
Battle Stations	$20
Battle Tank Kursk	$39
Battle of Austerlitz	$9
Battle of the Atlantic	$36
Battles of Napoleon	$24
Blitzkrieg Ardennes	$19
Blood & Iron	$52
Blue and the Grey	$42
Bravo Romeo Delta	$29
CW No Greater Glory	$21
Campaign	$39
Carrier Strike	$39
Carrier Strike Exp Pak	$19
Carriers at War	$34
Carriers at War Exp Pak	$37
Charge of the Light Brigade	$34
Conflict	$8
Conflict in Vietnam	$9
Conflict: Middle East	$14
Conflict: Korea	$36
Decision at Gettysburg	$19
Dreadnoughts	$42
Dreadnoughts Bismark	$29
Dreadnoughts Ironclads	$29
Dreadnoughts Deluxe	$89
Fifth Eskadra	$22
Fire Brigade	$34
Fleet Med	$27
Frontline	$13

the name, but it will be shipping in October, 1993. We currently expect the list price to be $69.95.

CGW: Modem and head-to-head play is becoming all the rage. Are you planning to incorporate either of these two features into the new product?

Kaemmer: Yes, two-player modem play will be included. We also would like to allow more than two players to compete, and are exploring the feasibility of different approaches to that problem. We'll have more information within the next few months

CGW: How many tracks will be included with the new game? What measures are you taking to ensure the faithfulness of the new tracks?

Kaemmer: Three or four tracks will be complete by the time the product ships, with all the others on the IndyCar schedule to be released as add-on tracks as soon as they are done. The tracks that are included cover the variety of circuits the IndyCars run on: a superspeedway, short oval, road course and/or city circuit. We have researched the tracks extensively, using detailed track maps to get the track lengths, widths, corner radii, etc. correct, U.S. Geological Survey data to get the altitude changes correct, and photos and video to get the surrounding details (grandstands, trees, etc.) in the right places. We also scrutinize in-car footage to make sure that the cambers and gradients are correct everywhere — yes, there is banking.

CGW: Replays are a popular and an important feature of driving simulations. One complaint I had concerning *Indy 500* was its inability to save more than one replay…will the new product include the ability to save multiple replays for later glory, and will replays be any longer than those in the original Indy?

Kaemmer: Multiples, yes. Longer…we may have the length of instant replay depend on the free memory in the machine, although 20 seconds already seems interminable, doesn't it? Multiple car setups can also be saved.

CGW: How will customized car set-up differ from the original? Will this operation be simpler or more technical/true-to-life?

Kaemmer: There are a few extra options: speedway or road course wings, rain tires, and you can change the engine's power curve and reliability by playing with the spark advance and fuel/air mixture. Brake bias will be adjustable from the cockpit. None of the complex settings adjustments will need to be made in order to have fun with the game, though. You'll be able to choose from three default set-

tings which range from an easy to drive setup through a fast and hairy setup. However, tweaking your settings can give you an advantage.

CGW: How large will the program be?

Kaemmer: It'll be bigger than *Indy 500*. It runs in 386 protected mode, so it will require a 386 or better (a 486 will increase the graphics realism, by allowing texture mapping in real time). It will require 2 Megs of RAM, and use between 2 and 4 Megs of hard disk space, plus about 500K for each add-on track.

CGW: How long has it taken to put this whole thing together? When did you decide that there would be a new product at all?

Kaemmer: We've been working on the new game for almost 1 1/2 years, with another four months to go. We decided that we were going to do it about a year and a half ago. I've been wanting to do it since Indy was finished, but it had to become financially feasible first.

CGW: Have you driven race cars yourself, or has anyone else at Papyrus?

Kaemmer: No to both. However, I do commute into Boston every day, and I believe after seven years of that you become eligible for a USAC license.

ON THE COMPETITION…

CGW: Recently, it has been Microprose' *World Circuit* that has captured the imagination of digital racers. Have you played this game?

Kaemmer: Yes, it's a nice game. In fact, when I first saw it, I was disappointed, since we were already hard at work on our game, and I was hoping it would be yet another lame driving game. The graphics in it are very good, it looks very much like you are driving a race car. But the physics

still leave much to be desired. It doesn't *feel* like you are driving a race car. It doesn't give me the sense that I'm in control of a car — more like it's in control of me, and it won't let me go where it's not safe to go. With the line magnet off, it feels even less like a car. The car set-up changes don't materially change the handling either. I haven't had the patience to see if they change your lap times.

CGW: Was there ever any attempt to get your new product to the marketplace before *World Circuit*?

Kaemmer: No. We could've hammered the game out quickly, but I prefer to take the time to get everything right. Our new game will be as far beyond any other driving game as *Indy* was when it came out. *Indy* has stood the test of time very well. It's still selling, and a lot of people are still playing it, even after several years. We have exceeded that level of depth in the new game, so I'm not worried that another driving game will come along and take away from our sales.

CGW: Finally, what will your new game have to offer that is superior to *World Circuit*?

Kaemmer: It feels like you are driving a real race car. The physics model is actually superior to *Indy's*. Engine and skidding sounds are dynamic, giving you feedback about the car's handling. Car setup is much more extensive than in *World Circuit*, and settings changes really alter the way the car handles. Plus you get to drive on many different types of courses: high speed, full throttle superspeedways, fast-paced short ovals, sweeping road courses and challenging city circuits. The circuits also have varying cambers (banking) as well as altitude changes. You'll find that a corner at the bottom of a hill will offer substantially more grip than one at the crest of a hill.

The graphics have a tremendous amount of texture-mapping — projecting bitmapped images onto 3D polygons, much like *Ultima Underworld* — which adds greatly to the realism and the sense of speed. The cars are polygon-rendered in real-time, not pre-drawn. Plus they are all texture mapped, so they look like real Indy cars, complete with sponsor's decals. They also break into pieces if they smash into the barriers. The instant replays are also very extensive, with a lot of TV-like camera footage (and the scream of doppler-shifted engines).

If confidence is a virtue, Kaemmer is better than most. Only time and the game-buying public will decide if the "new Indy" has what it takes to out-drive the competition. In the meantime, though, it certainly looks as though the gloves are off. CGW

CHIPS & BITS inc

FREE GAME WITH YOUR $75 ORDER*

*Shipping to US,PR,AK,HI,APO & FPO $4 per order. Air Mail to Canada $6 per order. Handling $1 per shipment.
2 Business Day Air US $6 per order; PR, HI $12 1st item + $2 ea. addt'l. AK $15 1st item + $2 ea. addt'l. Handling $1 per shipment.
Europe, S. America, Air Mail $20 1st item + $8 ea. addt'l.

PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM ARCADE

Airborne Ranger	$9
Arkura	$4
Atomino	$29
Back to the Future 3	$12
Bargon Attack VGA	$24
Batman the Movie	$24
Battle Storm	$32
Bill & Ted s Excellent Adv	$19
Brain Blaster	$28
Cogito Windows	$38
Combat Classics	$24
Continuum	$29
Cool Croc Twins	$24
Creepers	$34
D Generation	$28
Day of the Viper	$19
Dr Doom's Revenge	$9
Dragon's Lair	$22
Dragon's Lair 2 Time Warp	$34
Dragon's Lair 3	$34
Dragn's Lair Esc Singe Cast	$34
Eight Ball Deluxe	$38
Fast Track	$25
Freakin Funk Fuzzballs	$19
Galactic Conqueror	$31
Galactic Empire	$27
Ghost & Goblins	$21
Goblins	$24
Guy Spy	$27
Hyperspeed	$18
Killing Cloud	$19
Laffer Utilities	$21
Laser Squad	$32
Monty Python	$15
Night Breed	$26
Nova 9	$21
Obliterator	$6
Pac Man	$9
Pipe Dream	$19
Pit Fighter	$22
Power Hits: Battletech	$32
Power Hits: Sci Fi	$19
Punisher	$9
Rotox	$20
S.C. Out	$38
Savage	$15
Sierra Arcade Bundle 1	$24
Silpheed	$21
Sliders	$27
Space Ace	$32
Space Ace 2	$34
Space Wars	$37
Speedball 2	$25
Star Blade	$24
Stellar 7	$21
Street Fighting Man	$15
Street Football	$15
Super PacMan	$19
Super Space Invaders	$25
Superman	$28
Swamp Gas Windows	$38
Take-A-Break Pool WIN	$29
Taking of Beverly Hills	$19
Teenage MNT Man Miss	$31
Tengen's Arcade Hits	$12
Terminator	$34
Terrorpods	$24
Tetris Classic WIN	$26
The Light Corridor	$29
The Tinies	$29
Thexder 1	$15
Thexder 2 Fire Hawk	$15
Tristan Pinball	$29
Taxine	$24
Viking Child	$9
Volfied	$19
Wild Wheels	$26
Wrath of the Demon	$21
X-Men 2	$25
Xenocide	$6
Xiphos	$34

'MICHAEL JORDAN IN FLIGHT' captures all the air artistry of Michael Jordan with unprecedented realism. Play 3-on-3 basketball, hit from the outside, drive the lane or execute the give-and-go with offensive play-calling. Hold the court against 32 real-life competitors. Features digitized graphics, and instant replay. **$38**

'LINKS 386 PRO' offers **SUPER VGA** graphics and advanced features designed for your 386 or 486. New features include computer opponent, save game option that allows your friends to play against you in an existing game, pre-recorded games from worthy opponents, and many game modes. **$39**

'GAME MAKER' allows you to create 256 color VGA adventure and arcade games without programming. Characters, monsters, and parts of a screen can all be animated. Characters can gain or lose lives, score, hit points and 20 other attributes. Includes several full games, many scenes, monsters & backgrounds for you to use. **$68**

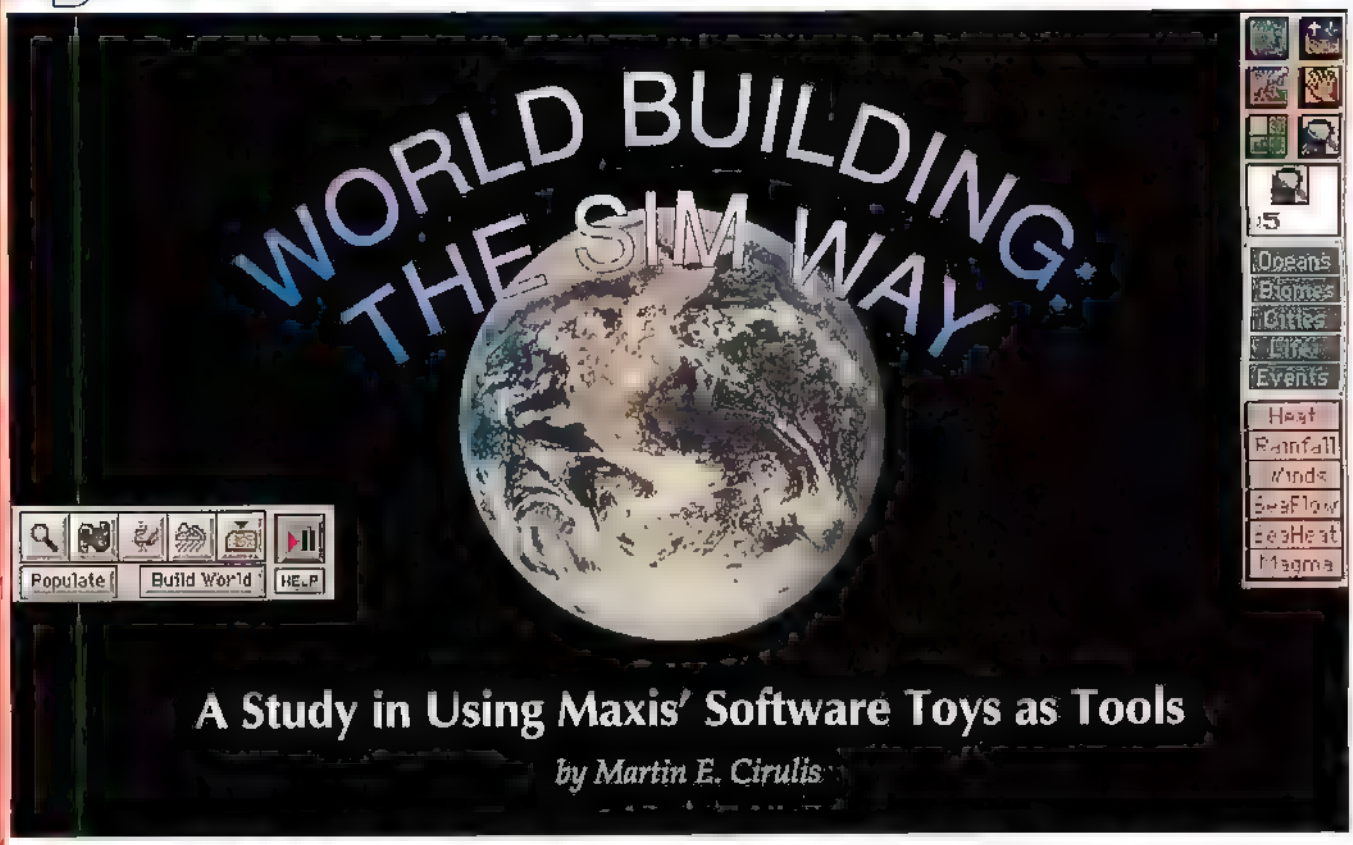
Visa & MC Accepted. CODs $5. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. All Sales Final. *SEE LAST PAGE FOR DETAILS

IBM EDUCATIONAL

Ace Detective	$30
Ace Explorer: Sequencing	$36
Ace Inquirer	$40
Ace Reporter	$36
Ace Reporter Deluxe	$48
Auto Map	$64
AutoWorks	$49
BodyWorks	$49
Boom Box	$29
Castle of Dr Brain VGA	$29
Cleo is a Dragon	$30
Clock Works	$19
Comic Book Maker	$32
Cuckoo Zoo	$32
Eagle Eye Mysteries	$32
EcoQuest 2 Lost Scrl Ram	$34
EcoQuest	$32
Evelyn Wood Dynmic Readr	$24
Fay's Word Rally	$32
Incredible Machine	$29
Island Of Dr Brain	$29
Jones Fast Lane	$24
Kidworks	$30
Kidwriter Gold	$32
Land of The Unicorn	$39
Mario Teaches Typing	$24
Marvin the Moose Vol 1 or 2	$30
M Beacon Teaches Typing	$26
Milliken Storyteller Vol 1 or 2	$30
Mixed Up Faery Tale	$29
Mixed-Up Mother Goose	$29
Munchers Bundle	$29
Never Ending Story 2 Crayn	$9
Orbits: Voyage Solar Systm	$39
Peanuts	$9
Phonics Plus	$25
Picture Perfect	$32
Play Room	$35
Print Shop Deluxe	$39
Print Shop Dlx Bus Graph	$24
Putt Putts Fun Pak	$22
Quarky Quaysoo's Turbo Sc	$29
Read 'n Roll	$36
Read 'n Roll Data Disk	$12
Read & Rhyme	$31
Rdr Rabbit 1 Early Reading	$37
Reader Rabbit 2	$37
Rdr Rabbit's Ready Letters	$37
Robot Writer Plus	$30
Rodney's Funscreen	$32
Scooter's Magic Castle	$32
Secret Island Dr. Quandry	$38
Snapdragon	$29
Speedreader WIN	$30
Speedreader WIN DD A	$12
Speedreader WIN DD B	$12
Speedreader WIN DD C	$12
Spell it Plus	$31
Spell-a-Saurus	$27
Spelling	$31
Spelling Wiz	$22
Stickybear Opposites	$23
Stickybear Parts of Speech	$32
Stickybear Reading	$24
Stickybear Reading Comp	$30
Stickybear Reading Tutor	$31
Stickybear Shapes	$29
Stickybear Spellgrabber	$32
Stickybear Spelling Tutor	$32
Story Sketcher	$42
Super Munchers	$29
Spr Solvrs. Midnight Rescue	$30
Super Solvers Spel bound	$31
Super Spellicopter	$21
Treasure Mountain	$39
TreeHouse	$39
Wacky Funster	$18
Wkly Reader Reading Comp	$31
Where in Space Carmen Dlx	$50
Where in USA Carmen Dlx	$45
Where in World Carmen Dlx	$52

IBM ROLE PLAYING

2400 AD	$12
ADD Collector's Edition 2	$45
ADD Starter Kit	$29
Bard's Tale 3	$32
Bard's Tale 3 Char Editor	$16
Bard's Tale Construction	$27
Battletech 2	$31
Beyond Blue Event Horizon	$36
Black Crypt	$32
Buck Rogers Countdown	$12
Captain Blood	$9
Celtic Legends	$32
Challenge of 5 Realms	$44
Champions	$37
Champions of Krynn	$19
Chmpions of Krynn Char Ed	$16
Cobra Mission	$49
Companion of Xanth	$36
Corporation	$14
Curse of the Azure Bonds	$15
Curse Azure Bonds Char Ed	$16
Cyber Empire	$32
Cyber Space	$39
Dark Queen of Krynn	$32
Dark Queen Krynn Char Ed	$16
Dark Sun	$37
Dark Sun Grey Isle Exp Pak	$34
Darklands	$39
Darklands Master Ed w/book	$51
Daughter of Serpents	$32
Death Knights of Krynn	$21
Death Knights Krynn Char Ed	$16
Dragon Wars	$12
Dragon Wars Char Edit	$16
Dragons of Flame	$9
Dungeon Master	$34
Dusk of the Gods	$24
Elvira 2 Jaws of Cerberus	$19
Elvira Mistress Dark	$29
Eye of the Beholder 1	$19
Eye of Beholder Char Edit	$16
Eye of the Beholder 2	$38
Eye of Beholder 2 Char Edit	$16
Eye of the Beholder 3	$42
Fountain of Dreams	$9
Four Crystals of Trazere	$24
Gateway Savage Frontier	$32
Gryphon Masters of Havlar	$38
Heaven and Earth	$32
Heros Quest 1 VGA	$24
Heros Quest 2:Trial Fire	$21
Heros Quest 3	$36
Immortal	$17
Joan of Arc	$12
Keys to Maramon	$12
King's Bounty	$15
Knights of Legend Char Edit	$16
Legacy of the Necromancer	$17
Legacy: Realm Of Terror	$34
Legend	$31
Legend of Valor	$39
Legends of Drakka	$38
Lord of the Rings V1	$32
Lord of the Rings V1 Chr Ed	$16
Lord of the Rings V2	$37
Lord of the Rings V2 Chr Ed	$16
Loremaster	$39
Lost Tribe	$29
Lure of the Temptress	$37
Magic Candle 1	$12
Magic Candle 1 Char Editor	$16
Magic Candle 2	$19
Magic Candle 2 Char Editor	$16
Magic Candle 3	$36
Martian Dreams	$37
Martian Dreams Char Editor	$16
Matrix Cubed	$32
Mechwarrior	$19
MegaTraveller Zhodani	$9
MegaTraveller 2	$19
MegaTraveller 3	$39



A Study in Using Maxis' Software Toys as Tools

by Martin E. Cirulis

As a Science Fiction writer, I sometimes long for the Golden Age of SF, when you could get away with writing a lurid tale or two about exploring the steaming jungles of Venus or encounters with the desert nomads of Mars. An age when the average reading audience was a trifle less questioning, an age when basic science wasn't so readily at hand, an age when they bought what you told them. Alas, things have changed in SF to the point where the believability of the set is almost as important as the plot. Contrary to mainstream belief, good SF is not simply made up: it is painstakingly built, from fact to extrapolation to fiction. WorldBuilding, the act of creating scientifically valid alien settings, has grown into a cottage industry itself, with seminars and how-to pamphlets available at almost every SF convention one would care to attend.

Unfortunately, all the advice and references in the world cannot tell a writer how his ideas will interact in ways he hasn't thought of yet. WorldBuilding is an act of modeling, but until now it has been a static model—a beautiful construct when done well, but lacking any sense of the dynamic. You could sculpt a perfect figure, but you could never be sure how it would sneeze, jump or cry. But now, this limitation has been inadvertently addressed by those clever kids at Maxis with two of their always interesting *Sim* products, *SimEarth* and *SimLife*. With the investment of a little imagination and logic, these two products move from the realm of software toys to that of writing tools.

Recently I had need of these two programs in one of my current projects, an SF epic I am co-writing with Lucius Sheperd, author of *Life During Wartime* and *The Golden*, and winner of a bucketful of Hugos, Nebulas and World Fantasy Awards. Being the junior partner and the one with three quarters of a B.Sc., I became responsible for crafting the backdrop. After climbing out from under a pile of geophysics and biology texts with a wad of notes and ideas, I decided to run some sims my way and see if my ideas would fly…or swim…or just sort of ooze.

Now before we go any farther, a small distinction must be made. The programmers at Maxis would probably be one of the first, followed by thousands of science majors with their hard-won knowledge, to point out that the *Sim* toys are not meant to be exact models of reality. Many shortcuts have been taken with the actual eco-processes they mimic. Having said this, it's important to point out the resemblance they have to reality rather than their limitations. To use *SimEarth* and *SimLife* as tools, one should realize they are to WorldBuilding as the *I Ching* or Tarot cards are to telling the future: they can't actually give you tomorrow's headlines, but they set your mind on paths that you might have missed on your own. For instance, I may never have thought of a race of ice-bound, intelligent trichordates, but seeing them develop on the screen of *SimEarth* made me consider the possibilities; at least enough to hustle down to the library and see what there is to know of trichordates and their unsuccessful sojourn on the real Earth.

With that little technical disclaimer out of the way, let's get on with the real nuts, bolts and chips of WorldBuilding…the *Sim* way.

SimEarth: Order out of Chaos

SimEarth is the least adaptable of the two programs because it is designed with most Earth parameters—size, gravity, chemical composition and such things—hardwired in. There are still ways around this. Besides, if endless alternate Earth's were good enough for *Star Trek*, they are good enough for us, at least for starters. This program won't be of much use to you if you are writing about exotic world forms like Rocheworlds or ultra-dense planetoids, but if you are of the old school and a basic spherical world of comparable size to Earth is good enough for you, then *SimEarth* is sufficient for some interesting experiments.

Of course, in both programs you should operate in experimental mode, as there's no use limiting the power you might need to alter things to your liking. Also, you will probably want to turn the auto-disas-

CHIPS & BITS Inc.

FREE GAME WITH YOUR $75 ORDER*

Shipping to US,FPO,AK,HI,APO & PPO $4 per order. Air Mail to Canada $6 per order. Foreign $11 per order.
2 Business Day Air US $6 per order; PR, HI $12 1st item + $2 ea. add'l; AK $18 1st item + $2 ea. add'l; Canada $12 per order.
Express, C. Canadian, Air Mail $18 1st item + $2 ea. add'l

PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM WARGAMES

Gary Grigsby Pacific War	$46
Gettysburg Turning Point	$36
Grey Seas, Grey Skies	$19
Halls of Montezuma	$24
Harpoon	$25
Harpoon Battle Set 2 or 3	$19
Harpoon Battle Set 4	$24
Harpoon Scenario Editor	$27
Harpoon Challenger Pak SE	$49
Harpoon Designer Series	$17
Harpoon Designer 2	$25
High Command	$45
Kampfgruppe	$59
Line in the Sand	$24
Long Lance	$39
MacArthur's War	$14
Main Battle Tank C Germany	$36
Malta Storm	$36
Man of War	$36
Marianas Turkey Shoot	$15
Midway	$19
Northern Fleet	$36
Operation Overlord	$29
Pacific Storm Midway Cpgn	$36
Pacific Storm Solomon Cpgn	$36
Panzer Battles	$24
Patriot	$44
Patrol Battle Set 2	$24
Patrol Scenario Editor	$27
Patton Strikes Back	$12
Prelude to Jutland	$26
Red Lightning	$12
Return to Falklands	$28
Rising Sun	$26
Rommel Battles For N Africa	$24
Rommel at El Alamein	$36
Rommel at Gazala	$36
Rorke's Drift	$34
Second Front	$21
Seventh Fleet	$36
Stalingrad Campaign	$36
Storm Across Europe	$12
Third Reich	$27
To The Rhine	$36
Typhoon of Steel	$12
UMS Original	$14
UMS 2	$19
UMS 2 Planet Editor	$19
Under Fire	$12
V Victory Gold, Juno, Sword	$44
V Victory Market Garden	$44
V Victory Utah Beach	$44
V Victory Velikiye Luki	$44
Victory at Sea	$37
War in the Falklands	$26
Western Front	$36
White Death	$19

IBM STRATEGY

A Train	$34
A Train Construction Set	$23
Air Force Commander	$29
Airbucks	$36
Ancient Art of War Sky	$34
Armada 2525	$29
Ashes of Empire	$48
Balance of Power 1990	$35
Bandit Kings Ancient China	$32
Battle Isle	$32
Battle Isle Scenario Disk	$22
Battles of Destiny	$36
Big Business	$12
Breach 2	$19
Breach 2 Scenario Disk	$15
Buzz Aldrin Race into Space	$42
Caesar	$36
Carrier Command	$9
Castles	$18
Castles 2	$36

'THE 7TH GUEST' is a terrifyingly real virtual environment lurking on a CD ROM. Henry Stauf was a maker of amazing puzzles. His greatest creation is the strange mansion in which you now find yourself. Features video clips with live actors, bizarre games & puzzles, 22 fully rendered rooms to explore, and many ghastly discoveries. **$56**

'CONQUERED KINGDOMS' allows you to invade castles and fly over mountains as you battle for control of the world. Features nine scenarios, a random map generator, human and fantasy combat troops, 21 levels of difficulty, modem play, several full campaign conquests, and complete game scoring history. **$36**

'SOUND MACHINE' brings together 2 of the most popular computer add-ons in one inexpensive package. Features a genuine sound blaster chipset, digitized voice input/output, full duplex MIDI interface, built in 4W amp, volume control, a pair of 3" magnetically shielded speakers, and a Quickshot joystick. **$99**

Visa & MC Accepted. CODs $6. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. **All Sales Final.** *SEE LAST PAGE FOR DETAILS

Circle Reader Service #41

IBM STRATEGY

Castles Northern Campaigns	$19
Civilization	$32
Civilization Master Edition	$36
Clash of Steel	$38
Cohort 2	$18
Command HQ	$19
Conquered Kingdoms	$36
Conqueror for Windows	$39
Conquest of Japan	$36
Crisis in the Kremlin	$39
Dark Seed	$28
Dino Wars	$28
Diplomacy	$12
Discovery Sip Columbus	$34
Dragon Lord	$12
Dune	$19
Dune 2	$44
El Fish	$41
Empire Deluxe	$35
Fields of Glory	$36
Fighting for Rome	$12
Final Conflict	$17
Fireteam 2200	$24
Fireteam 2200 Constrctn Kit	$25
Fort Apache	$34
Gemfire	$37
Genghis Khan	$37
Globa Conquest	$34
Globa Effect	$17
Goblins 2 Princes Buffoon	$24
Gold of the Americas	$19
Imperium	$26
Inindo	$37
Koshan Conspiracy	$32
Kye Deluxe WIN	$26
L'Empereur	$37
Lemmings	$32
Lemmings 2	$32
Lemmings Dataclisk	$19
Liberty or Death	$37
Lost Admiral	$19
Lost Admiral Enhanced	$44
Lost Admiral Scenario Disk	$23
Lost Patrol	$6
Maelstrom	$38
Medieval Lords	$14
Mega Lo Mania	$31
Mercenaries Tegel's	$38
Merchant Colony	$17
Microcosm	$32
Millenium	$15
Monarch	$38
MoonBase	$24
New World Order	$38
Nobunaga's Ambition	$25
Nobunaga's Ambition 2	$37
Nuclear War	$9
Objection	$34
Objection Enhanced	$49
Operation Combat	$12
Overlord	$21
Pacific Theater Ops	$42
Paladin 2	$34
Perfect General	$29
Perfect General 2	$44
Perfect General Scen Disk	$21
Perfect General Scen Dk 2	$23
Populous	$17
Populous 2	$38
Powermonger	$34
Powermonger World War 1	$21
PushOver	$32
QQP Bundle	$49
Railroad Tycoon	$34
Railroad Tycoon 2	$52
Rampart	$17
Reach for the Stars	$24
Realms	$17
Red Zone	$32
Renegade Legion Interceptr	$12
Riders of Rohan	$19

IBM STRATEGY

Robo Sport WIN	$34
Romance 3 Kingdoms 1 or 2	$42
Rules of Engagement	$19
Rules of Engagement 2	$38
Second Conflict WIN	$34
Seven Cities Gold 2	$38
Shadow President	$34
ShadowGate WIN	$29
Sid Meir's Civil War	$58
Siege	$21
Siege Expansion Disk	$19
Sim Ant	$32
Simcity	$27
Simcity WIN	$34
Simearth	$34
Simearth WIN	$38
Simfarm	$41
Simlife	$41
Spaceward Ho!	$38
Special Forces	$39
Spoils of War	$34
Star Control	$29
Star Control 2	$36
Star Legions	$38
Starfleet 1	$17
Starfleet 2	$38
Strategic Forces	$19
Sub Version	$36
Sub Wars	$45
Sword of Aragon	$28
Task Force 1942	$39
Tegels's Mercenaries 2	$44
Theatre of War	$17
Traders	$19
Unnatural Selection	$32
Utopia	$29
Vikings Fields of Conquest	$37
Visions of Aftermath	$24
War in the Gulf	$38
Warlords 2	$42
Warlords	$12
When Two Worlds War	$42
Worlds at War	$19

IBM SIMULATION

688 Attack Sub	$19
A T P Flight Simulator	$29
A.T.A.C	$34
A10 Tank Killer 1.5 Enh	$34
AH-64 Helicopter	$46
Aces of the Pacific	$42
Aces Pacific Mission Disk 1	$27
Aces Over Europe	$42
Aces Europe Mission Disk 1	$27
Aces Europe Mission Disk 2	$27
Air Duel	$38
Air Warrior SVGA	$35
Allied Forces	$12
Armour Geddon	$29
Armoured Fist	$38
B17 Flying Fortress	$39
Battle Command	$12
Birds of Prey	$32
Blue Angels	$12
Campaign Strategic Flight S	$37
Car and Driver	$38
Cardinal of the Kremlin	$9
Carrier Command	$12
Combat Classics	$24
Conqueror Multi Tank	$4
Crash Course	$6
Das Boot Submarine	$9
Design Your Own Railroad	$29
Dynamix Bundle 1	$29
Elite Plus	$19
Eye of the Storm Fit Sim	$29
F117A Stealth Fighter	$42
F15 Strike Eagle 3	$42
F15 Strike Eagle 3 Aces Pak	$49

ter modes off unless you are really interested to see how your ideas react under stress. As a writer, I am mostly interested in disasters of a more choreographed kind.

SimEarth is used to investigate the implications of the initial conditions that you have thought up. Use the Geosphere and Atmosphere Model Control panels to create the basic pattern of your alien world and try to think of everything first. A world of vicious storms is going to have pretty serious cloud-cover, so you should probably crank up the Cloud Albedo and Rainfall factors, while a little research will tell you that you should probably also increase the planet's Axial Tilt to power those storm patterns.

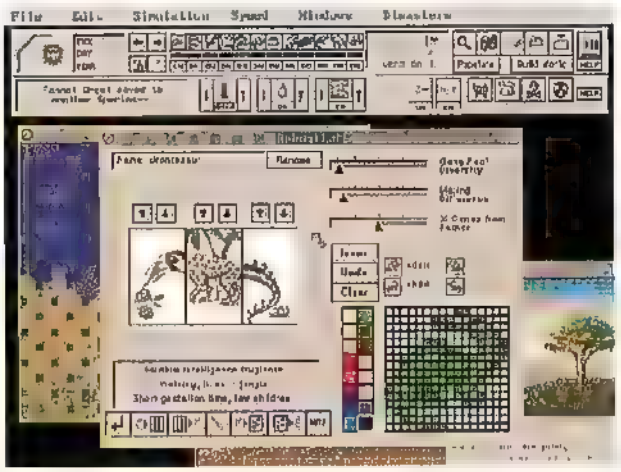
You should probably try not to fool with the biosphere settings until you have some sort of clear evolutionary philosophy, as these changes are the most gratuitous and hardest to justify scientifically. If you don't have any pet theories to try, just let things go with the factory settings and assume that your world has the same base rules of life that Earth does, which, depending on which professors you talk to, may pretty much be the case in the real universe. Later on, if your initial design seems to be very partial to life you may want to up the Reproduction Rate or fiddle with the Thermal Tolerance if you find yourself with a desert world. A world orbiting a hot, young star can be reflected with a high Mutation Rate, a factor to be remembered when creating lab sites in *SimLife* as well.

Some of the changes you make can be subtle, others extreme, but try to have a rationale for all of them and above all else, stick to them. Remember, each run you make is an experiment; if you end up with a blazing, Venus-like inferno, or a globe of undifferentiated goo where amoebas are king, maybe you should rethink your initial ideas or perhaps research a little more deeply. Altering the settings halfway through, like turning off an inconvenient Greenhouse Effect, is not wise unless you have some sort of alien intervention plot in mind. This goes for popping in biomes or life-form classes as well; just stick to what the world you've designed will give you. Maybe it won't be exactly what you wanted, but it might be just the inspiration you were looking for. And pay attention to the composition and density of your model atmosphere, these are the little details that can make a world seem like a living thing in a story instead of a sound stage from the SF backlot.

Once you've run a few simulations, print out a map or two that strikes your fancy and take some notes on rainfall, temperature, and altitude of various biomes and nearby life form classes that you think might be handy for your story. With some of these details recorded, you should have some idea of the specific plants and animals that will inhabit your world. Do some more research, whip up a few funky species, and prepare for your next Sim project.

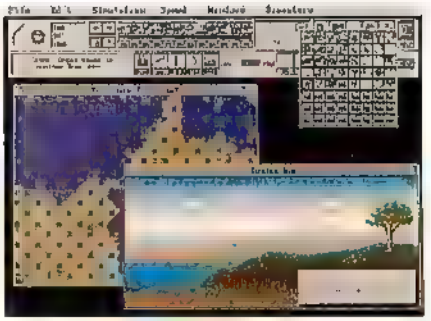
SimLife: All the Myriad Ways

Once you have detailed a few original and interesting life forms, you should see how they might interact, and *SimLife* is ideal for this. In fact, in some ways it's better at simulating alien environments than its predecessor. Clever use of the Physics menu can simulate conditions on a variety of alien worlds and the way they affect life. If your life forms live around bubbling volcanoes, up the cost of walking. Low G world or thick atmosphere? (The latter possibly indicated by your *SimEarth* data). Lower the cost of flying. High winds and storms? Better up the Soil and Climate Change ratio.



Now, pick a lab site using either your *SimEarth* notes or just a solid idea in your head. Keep in mind what kind of environment you are going for (island, mountain, plains, tropical, temperate, desert) and don't forget to set Climate Lab controls to reflect the latitude of your lab site and the Axial Tilt of the world.

Creating the terrain is a relatively straightforward process. If you don't have specific features in mind, just set the Mountain/Lake Ratios in the World-Building Menu to what seems appropriate and let the computer whip it up for you. If you have a specific map in mind, use *SimLife's* very nice map editor to build it square by square. I was able to generate some very accurate and detailed maps.



The main thing here is to try and keep the experiment as small as possible and still get it to do what you need, unless you have a 486/zillion and memory chips to burn. Since *SimLife* isn't a *Windows* application yet, a huge (and therefore pretty slow) experiment can keep you off the keyboard a long time and put your writing way behind schedule. Of course, your computer doesn't have to sleep when you do…

After you have the lab set up, you must populate it, and it is here that the program requires as much from you as you do from it. Before designing anything, you must have a few things straight in your head, and know what has to be altered in the experiment to reflect these things. How big, roughly, is each square of terrain? (reflected in movement costs) Does each icon represent a single specimen or a group? (Reproduction method in animals and Food Value in plants) Are the days long or short? (Day Length ticks).

Again, imagination can compensate for seeming limitations in the program. If you were working on an ecosystem where all life was in constant flight, a situation that is seemingly not addressed very well by the simulation, making flying easy won't cover it; you'd have to find a way to reflect the true lack of solidity of your world. A way around this is to rig up a completely aquatic environment, making all plants of the floating variety and all animals the swimming kind. True, the experiment won't reflect all the genetic permutations of the gaseous environment, but the effect is pretty close, and as long as you know they are all actually flying, the data and any conclusions you draw from it should still be valid.

With these factors settled you can get down to the serious work: specific designs of life forms. This task can be divided into two groups of generalities, Plants and Animals.

Plants are the easiest to work with because plant life is more easily categorized, and the program gives you less options in

CHIPS & BITS Inc.

FREE GAME WITH YOUR $75 ORDER*

Shipping to US,PR,AK,HI,APO & FPO $4 per order. Air Mail to Canada $6 per order. 2 Business Day Air US $6 per order; PR, HI $12 1st item, $2 ea. addl. AK $18 1st item, $2 ea. addl. Europe, S. America Air Mail $18 per item. Shipping $1 per software

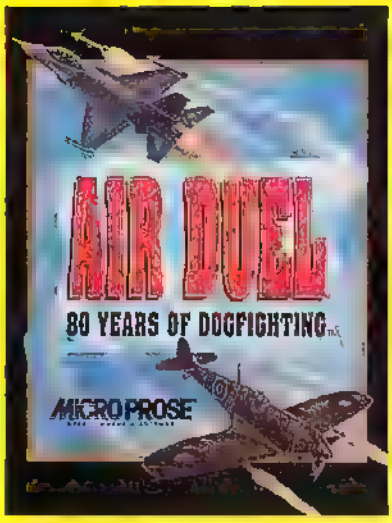
PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM TRADITIONAL

Hoyle's Book Games V1	$21
Hoyle's Book Games V2	$19
Hoyle's Book Games V3	$29
Hoyle's Book Games V4	$29
Jeopardy 25th Anniversary	$15
Jeopardy, Super Talking	$21
Jigsaw Pinups	$24
Laffer Utilities WIN	$21
Lexicross	$24
Lotto Gold	$29
Monopoly Deluxe	$29
Omar Sharif on Bridge	$37
Penthouse Jigsaw XXX	$24
Pictionary	$12
Planet of Lust	$12
Prime Time Hits	$25
Prime Time Hits 2	$24
Risk	$21
Sargon 5	$13
Scrabble Deluxe	$26
Shanghai 2	$29
Sharkey's 3D Pool	$12
Shog. Master	$34
Sierra Family Fun Pak	$29
Solitaire Royale	$19
Solitaire WIN	$32
Solitaires Journey	$34
Sorry	$12
Stratego	$31
Strip Poker 3	$31
Strip Poker 3 DD1-6 Each	$19
Super Jeopardy	$27
Super Tetris	$29
Swap	$29
Terminator Chess	$34
Tetris Classic	$27
Trump Castle 3	$34
Vegas Entrtnmnt Pak WIN	$20
Vegas Games Pak WIN	$19
Video Poker AlaCarte	$34
Video Poker Villa Crespo	$12
Video Poker WIN	$19
Video Poker by Masque	$19
Virtual Reality Studio 2	$64
Wayne's World	$26
Wheel of Fortune 3	$9
Wheel of Fortune Gold	$15
Word Tris	$27
World Champion Backgmmn	$24
World Champion Cribbage	$24

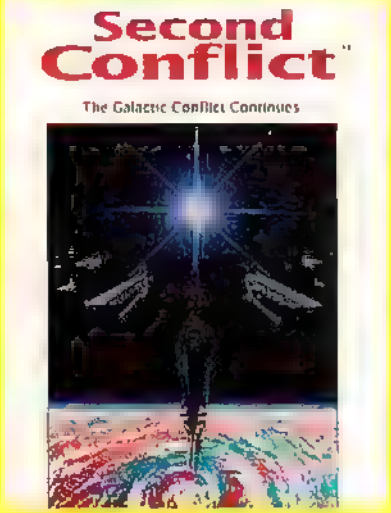
IBM BUDGET

2400 AD	$9
3 D Pinball	$10
3 in 1 Players's Pack	$9
4th & Inches	$4
Acquire	$9
Airborne Ranger	$9
Allied Forces	$12
Amazing Spiderman	$9
Artura	$4
Backgammn By George WIN	$9
Banzai	$12
Baseball Facts	$10
Battle Command	$12
Big Business	$9
Blackjack	$9
Blackjack WINDOWS	$12
Blue Angels	$12
Blue Max Aces Great War	$9
Buck Rogers Countdown	$12
Captain Blood	$6
Card nal of the Kremlin	$9
Carrier Command	$9
Chess Net WINDOWS	$9
Chess X Colossus	$9
Clue	$12
Combination Lock	$10
Conflict	$8



'AIR DUEL' lets you experience air-to-air combat across the decades with everything from a sopwith camel to a MIG 23. Features combat in 6 historic periods, ability to match aircraft from different time periods, a selection of 12 aircraft each with its own unique flight characteristics and weapons, & modem play. **$38**

'GREAT BATTLES OF THE 20TH CENTURY' brings 20 new scenarios for the **Perfect General** game. Includes 1967 & 1973 Suez conflicts, Kursk, The Moscow Push, Stalingrad, Malta, Long Binh Inferno, Crete, Falklands, Inchon, Operation Sea Lion, Pusan Per,Sagon,Bataan, Fulda, Dnepr Br., Gudenan Forward, & more. **$23**



'SECOND CONFLICT' is a game of interstellar strategy & conquest for windows. Control all aspects of the economy, military, and civilian population. Allocate resources to produce battleships, planetary defenses, stealth ships, transports and missiles. Features multiple human & computer players, & a scenario editor. **$34**

Visa & MC Accepted. CODs $6. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. **All Sales Final.**

IBM BUDGET

Conqueror Multi Tank	$4
Covert Action	$12
Crash Course	$6
Cybergenic Ranger	$6
Dark Half	$10
Das Boot Submarine	$9
Defender of the Crown	$12
Diplomacy	$12
Don't Go Alone	$6
Double Dragon 3	$8
Dr Doom's Revenge	$9
Dr Thorp's mini Blackjack	$10
Dragon Force	$12
Dragon Lord	$12
Dragon Wars	$12
Dragons of Flame	$9
Earthrise	$9
F15 Strike Eagle 1	$7
Face Off	$9
Fighting for Rome	$12
Free DC	$9
Future Wars	$9
Gama Force	$6
Gauntlet 2	$9
Gremlins 2	$6
Gunship	$12
Harmony	$5
Hole In One Min Golf	$7
Hole In One Mini Golf Delux	$9
Jeopardy	$9
Jeopardy 2	$9
Joan of Arc	$12
John Elway Quarterback	$6
L.A. Law	$9
Land Sea Air Trilogy	$12
Lane Mastadon	$6
Lightspeed	$9
M U D S	$9
MacArthur's War	$6
Magic Johnson Fast Break	$6
MegaFortress	$12
Mines Of Titan	$9
Ms PacMan	$6
Nuclear War	$9
Obliterator	$6
Operation Combat	$12
Pac Man	$9
Panzer Battles	$12
Pictionary	$12
Pirates	$6
Planet of Lust	$12
Punisher	$9
Renegade Legion Interceptor	$12
S D I	$7
Sentinel Worlds 1	$9
Sex Vixens from Space	$12
Shadow Sorcerer	$9
Space 1889	$12
Spirit of Excalibur	$9
Storm Across Europe	$12
Test Drive 2 Muscle Cars	$5
Tie Break Tennis	$12
Time Quest	$12
Trump Castle 2	$12
Turn-n-Burn	$10
Typhoon of Steel	$12
Under Fire	$12
Uninvited	$6
Video Poker Villa Crespo	$12
Video Poker WIN	$12
Video Poker by Masque	$12
Viking Child	$9
War In Middle Earth	$12
War of the Lance	$9
Warlords	$12
Weird Dreams	$9
Wheel of Fortune	$6
Wheel of Fortune 2	$9
Wheel of Fortune 3	$9
X-Men	$9
Xenocide	$6

MAC GAMES

Battle Chess	$29
Dragon's Lair COLOR	$34
Hardball 2	$31
Harpoon Battle Set 4	$27
Ishido	$34
Might & Magic 1 & 2	$32
Monopoly	$29
Out of This World COLOR	$36
PGA Tour Golf	$38
Pools of Darkness	$38
Puzzle Master	$32
Railroad Tycoon	$45
Reach for the Stars	$29
Red Baron COLOR	$39
Space Ace 2	$34
Spirit of Excalibur COLOR	$29
Starflight 2	$38
Super Tetris	$32
Test Drive 2	$27
Trump Castle 2	$34
Vette	$33
Where World is Carmen SD	$27
Yeager's AFT	$32

*FREE GAME OFFER

Spend the specified amount on any in stock software and choose a free game from the corresponding list below. Offer subject to change or cancellation without notice. Valid only while supplies last.

SPEND $75

4th & Inches 5.25
Airborne Ranger 5.25
Artura
Backgammon by George
Big Business 5.25
Bravo Romeo Delta
Gunship
Obliterator
Pirates
SC Out
The Tinies
Xenocide

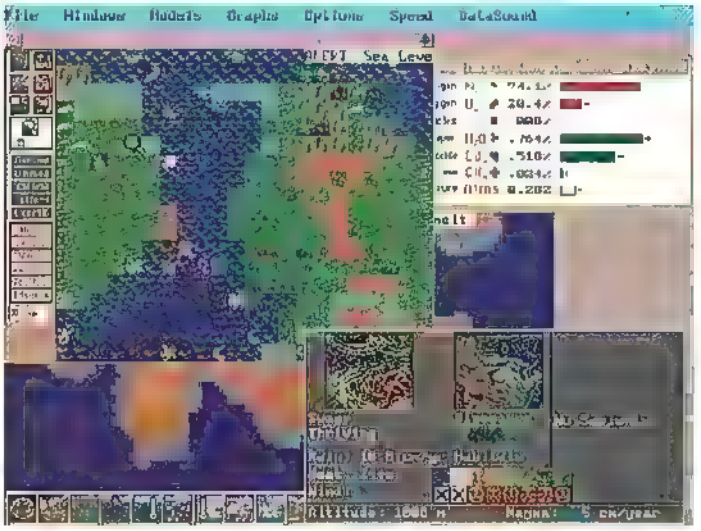
SPEND $100

Blackjack for Windows
Covert Action
Dark Half
Defender of the Crown
Dragon Force 5.25
Grandmaster Chess
Hole in 1 Mini Golf Dlx
Mac Arthur's War
Operation Combat
Panzer Battles 5.25
Patton Strikes Back
Railroad Tycoon
Sentinel Worlds
Video Poker for Windows
War of the Lance 5.25

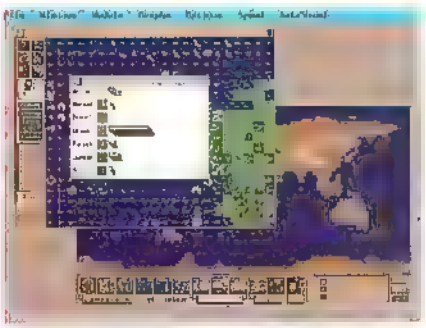
SPEND $200

Allied Forces
Bridge 7.0
Cardinal of the Kremlin
Command HQ
Dune
F15 Strike Eagle 2
Lost Admiral
Red Storm Rising
Warlords 5.25

their characteristics. Say I have a lovely, detailed sketch of a purple and orange spike-tree that tinkles in the wind and glows at night. If it is also deciduous, needs a lot of moisture, grows in a temperate climate, and has dropping seeds, I might as well use a Poplar model from *SimLife's* library. Here the program isn't as useful in helping you make up new things as it is in helping you figure out where your new things will grow on your alien world. I have found it very useful to do a simple botanical study by populating a lab site with a random spread of Earth plant species from the library and watching to see what takes hold. If I do this and notice that the Poplar plants are doing very well, I should probably make a note regarding the abundance of purple and orange spike trees around my mid-latitude villages.



Since there are more genetic characteristics and considerations for animal design in *SimLife*, there is both more leeway and more work in the testing of things truly alien. The "What comes out on top" test that I describe above for plants works using the animals in the Earth library as well, but the answers you get from this procedure are much more general. If you have a specific site in mind but are not sure how to populate it, then a general test



will show if it can support a large population of grazers or whether carnivores should be large or small. But be warned, this kind of experiment is time consuming and doesn't always give accurate results as the initial burst of random animals can wreak havoc with your plant ecosystem before any kind of stable animal population occurs.

The more difficult but far more rewarding method is to try to fit the beasties of your imagination into the genetic framework *SimLife* provides. The key here is to work with your general categories. There are as many theories of what alien life may be like as there are StarFleet uniforms at SF conventions, but no matter how esoteric those theories are, they can be generalized in a very realistic way.

The inhabitants of Alpha Centauri C may be incomprehensible glowing spheres, but if those spheres drift around all day evaporating little colored rocks off mountain tops, then they are basically Herbivores. If they travel with other glowing spheres, then they are basically herd animals. If they drop off hundreds of little shiny specks that eventually grow into glowing spheres, then they are basically asexual life forms that have many young. And so on. This is a very important WorldBuilding technique regardless of whether you are *Sim*-ing or not, but with *SimLife* at your disposal, it is indispensable. If you are having trouble making these generalizations with your creations, then perhaps more research or fleshing out is in order.

Once you have these generalizations down, it's a relatively simple matter to plug them into *SimLife's* genetic codes and give them electronic life in the fields of your computer's memory. Even the documentation for *SimLife* agrees that the creation of a stable food web is fairly difficult, so don't be too depressed if the first few experiments are failures. Once you get the hang of things, you can start putting more consideration into your results. Just keep in mind what you are testing.

If you are simply interested in whether your Gormanian Hell-Hounds can survive on a diet of cute furry things, don't knock yourself out on creating a bizarre and complex experiment. Put your effort in creating the Hell-Hound model and just populate your lab site with good old Earth squirrels for edibles. A few run throughs and close examination of the History charts will give you a good idea of the ratio of cute furry things to Hell-Hounds that would work on your world. If everything just keeps dying off, then fiddle with the Hell-Hound design a bit or even better fiddle with the Squirrels and, Voila! The birth of Gormanian Vapor-Bunnies!

Even more interesting and helpful is when the simulation fiddles with your designs all by itself using mutation and natural selection to fit your ideas into a coherent pattern. This can spur whole new bursts of creativity in directions you hadn't even considered when you created the original life forms. The keys to this kind of study are the Speciation command to help you categorize any useful adaptations you hadn't thought of, and the Variables option from the Populate menu, to help you keep track of the behavior and success of your changing life forms. Sometimes a day in the life of a Hell-Hound can be very revealing.

Sim-ing it all up.

Neither *SimEarth* nor *SimLife* are meant to be shortcuts to an advanced degree in Biogenetics or Geophysics, and nothing can replace a lot of reading and asking the right questions of people who have spent the time getting the appropriate education. However, they can be very useful idea generators for most writers and can serve to help new SF writers avoid some of the more common mistakes that can mar an otherwise well written story. Those ravenous monsters on the plain may be very exciting, but you're going to lose some of your audience if those same plains aren't filled with monster-food. The kind of detail that these two programs can help you provide is the stuff that turns an interesting backdrop into a living, breathing world that readers won't want to leave and will be eager to return to.

Lucius Sheperd and I are very pleased with the world we have created for our epic, and some of the simulations I ran were an important part of that creative process. The hours spent pushing these programs to their limits were rewarded with a horde of new ideas and directions. I can only hope you agree when the book is published in late '94 or early '95.

Any help a writer can find to free up his or her creative resources is a good thing. A pencil may not create the building, but it certainly makes the job easier for the architect. In *SimEarth* and *SimLife*, the "toymakers" at Maxis have gone a step beyond giving us software toys. They have given some of us software tools. CGW

CHIPS & BITS inc.

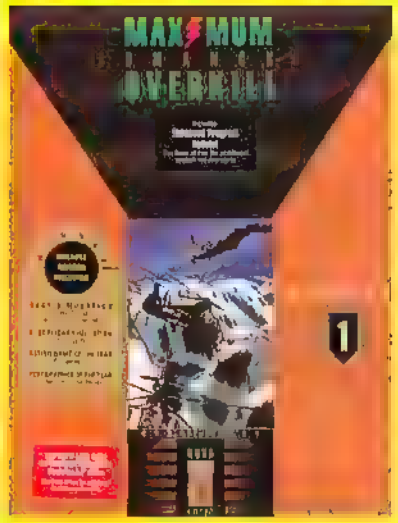
FREE GAME WITH YOUR $75 ORDER*

Shipping to US,FPO,AK,HI,APO & FPO $4 per order. Air Mail to Canada $6 per order. Handling $1 per shipment.
2 Business Day Air US $6 per order. PR, HI $12 1st Item + $2 ea. add'l. AK $18 1st Item + $2 ea. add'l. Handling $1 per shipment.
Hours, 8 A.M.-Midnight ET, 7 days a week. All orders shipped same day. Subject to availability and price change.

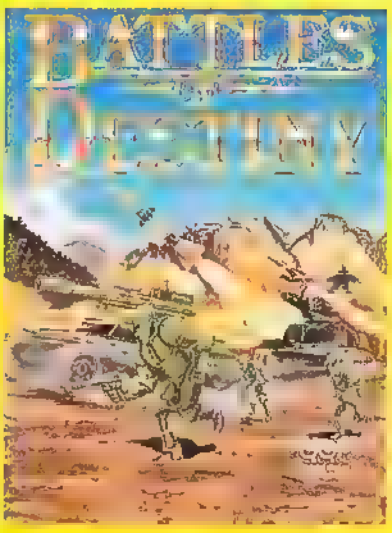
PO Box 234
Rochester, VT 05767
Fax 802-767-3382
Int'l 802-767-3033
Call 800-753-4263

IBM SIMULATION

F19 Stealth Fighter	$24
F40 Pursuit Simulator	$31
Falcon 3.0	$48
Falcon 3 Scen 2 Mig 29	$25
Falcon 3 Scen1 Fighting Tgr	$24
Flight Planner	$24
Flight Simulator 4.0	$42
Flight of the Intruder	$15
Fly the Grand Canyon	$45
Game Pak 1	$36
Great Naval Battles	$44
Great Naval Batl Scen Build	$28
Great Nav Bat America in Atl	$21
Great Nav Bat Supr Ships Atl	$19
Gunship	$12
Gunship 2000	$37
Gunship 2000 Scenario Disk	$24
Heroes of the 357th	$15
HoverForce	$31
Iron Helix	$52
Jet Fighter 2.0	$39
Jet Fighter 2 Mission Disk	$19
Jump Jet	$39
Jump Jet Aces Pack	$50
Knights of the Sky	$29
LHX Attack Chopper	$17
Land Sea Air Trilogy	$12
Land Sea Air 2	$29
Life and Death	$19
Life and Death 2	$24
Lightspeed	$9
Mantis Experimental Fighter	$39
Mantis Exp Speech Pak	$19
Maximum OverKill	$44
Maximum Overkill Missn Dk1	$28
Maximum Overkill Missn Dk2	$28
MegaFortress	$12
Megafortress Mega-Pak	$38
Megafortress Miss Dk 1 or 2	$28
Orbits	$37
Pacific Islands 2	$30
Power Boat Simulator	$39
Power Politics WIN	$34
Privateer	$52
Rapcon	$29
Reach for the Skies	$31
Red Baron	$36
Red Baron Missn Dk Builder	$24
Red Storm Rising	$12
Road & Track Grand Prix Un	$37
Scenery Collection Set A	$37
Scenery Collection Set B	$34
Scenery Collctn California	$37
Scenery Collctn Great Britain	$34
Seal Team	$42
Search for the Titanic	$27
Secret Weap Luftwaffe	$34
Secret Weapons Exp 1-4 Ea	$21
Shuttle	$26
Silent Service 2	$19
Sky Chase	$25
Strike Aces	$19
Strike Commander	$48
Strike Commndr Speech Pak	$24
Stunt Driver	$15
Stunt Island	$36
Stunts	$15
Syndicate	$48
Tank	$34
Task Force 1942	$39
Task Force Admirals Pack	$52
Team Yankee	$29
Team Yankee 2	$27
Test Drive 3	$29
Test Drive 3 Road & Car	$15
Their FH Battlehwks Bundle	$44
Thunderhawk	$21
Thunderstrike	$27
Tie Fighter	$46
Top Gun Danger Zone	$20
Tornado	$52



'COMANCHE MAXIMUM OVERKILL MISSION DISK 1' pushes the envelope with 30 new action packed missions in ultra realistic new terrain from arctic night to an arid desert gorge. Features 3 new campaigns, enhanced AI, & new enemies (SCUD launchers, HIND 24 gunships, & BRDM-3 gun jeeps). **$28**



In **'BATTLES OF DESTINY'** you must seek out and destroy up to 3 opponents in order to conquer the world. Features modern play, air, ground and naval combat, challenging artificial intelligence, 22 different units to construct, more than 20 worlds to conquer, campaign style play, and a complete player history. **$36**

'THE CARRIERS AT WAR CONSTRUCTION KIT' provides an infinitely flexible tool for creating a particular battle or an original scenario. Build ships and planes, organize squadrons, draft maps, position air bases and adjust the artificial intelligence used by the computer. 3 new scenarios included. Wake Island, Guadalcanal, & Tarawa. **$37**

Visa & MC Accepted. CODs $6. Checks Held 4 Weeks. Money Orders Treated as Cash. Most Items Shipped Same Day. Shipping times not guaranteed. Check compatibility before you buy. Defectives replaced with same product. Offer, price & availability subject to change. All Sales Final. *SEE LAST PAGE FOR DETAILS

IBM SIMULATION

Tracon 2	$29
Ultrabots Sanction Earth	$39
Voice Commander F117A	$18
Voice Commander F15SE3	$18
Wing Commander	$19
Wing Commander 1 Deluxe	$48
Wing Commander 2	$48
W C 2 Operation 1 or 2	$22
W C 2 Speech Mod	$13
W C Secret Mission 1 or 2	$20
Wolfpack	$15
World Circuit Champnshp Ed	$45
X-Wing	$39
X-Wing Mission Disk 1	$24
Yeager's Air Combat	$21

IBM SPORTS

4D Boxing	$17
4th & Inches	$4
ABC Monday Night FB	$37
ABC Wide World Boxing	$32
APBA Base Team Disks	$21
APBA Baseball	$24
APBA Basketball	$34
APBA Bowling	$14
APBA College Basketball	$32
APBA Football	$34
ATP Tennis	$34
Action Sports Soccer	$25
All American College Ftbll	$36
American Gladiators	$21
Basketball Challenge	$28
Bo Jackson Baseball	$32
Cycles Grand Prix	$28
David Robinson NBA Action	$44
Days of Thunder	$24
Front Page Football	$36
Greens	$34
Hardball 3	$34
Hardball 3 Players Disk	$17
Hardball 3 Stadium Disk	$19
Hole In One Mini Golf	$12
Hole In One Mini Golf Crs Dk	$6
Hole In One Mini Golf Dlx	$12
Indianapolis 500	$17
Jack Nicklaus Unlimited Golf	$27
Jack Nicklaus Clip Art	$12
Jack Nicklaus CD 1-5 Each	$15
Jack Nicklaus Greatest 18	$27
Jack Nicklaus Signature Ed	$42
Jack Nicklaus SE Course 1	$14
Jack Nicklaus SE Clip Art	$24
Joe Montana Football	$31
John Elway Quarterback	$6
Lance Haffner Baseball	$36
Lance Haffner Boxing	$36
Lance Haffner College BBall	$36
Lance Haffner Football	$36
Lance Hafner Hockey	$36
LH Pro Basketball	$36
Lance Haffner Team Disks	$16
Lance Haffner Utilities	$16
Links	$29
Links Courses 1-7 Each	$17
Links Pro 386 Golf	$39
Links Pro Course 1-3	$20
Madden Football	$17
Madden Football 2	$32
Mario Andretti Racing	$17
Michael Jordan Flight Sim	$38
ML Baseball Manager's Ch	$19
ML Football 2	$39
ML Personal Pro Golf	$28
ML Wrestling 1990	$28
Micro League Football Dlx	$39
Microleag Baseball 4 USAT	$31
Microleague Basketball	$28
Microsoft Golf for Windows	$39
Mike Ditka Power Football	$32

IBM SPORTS

NFL Challenge	$60
NFL Challenge Team Disks	$22
NFL Challenge Premium Ed	$59
NFL Football	$31
NFL Pro League Football 92	$24
NFL Video Football	$39
PGA Tour Golf	$32
PGA Tour Golf Ltd Ed	$45
Playmaker Football	$26
Pro League Baseball	$18
Pro Tennis Tour 2	$32
ProFootbal Analyst 92 Edt	$19
Road to the Final Four	$37
Summer Challenge	$34
T K O	$6
The Games Winter Challnge	$34
Tom Landry Football	$24
Tony La Russa Baseball 2	$36
Tony La Russa2 Stadium Dk	$18
Tony La Russa 2 92 Team	$12
Tony La Russa Baseb2 F M	$18
Wayne Gretzky Hockey 3	$39
Wayne Gretzky League	$26
Weaver 2 0 commemorative	$41
Weaver Baseball 2.0	$14
Wilson Pro Staff Golf	$23
World Circuit	$32
World Class Soccer	$28

IBM TRADITIONAL

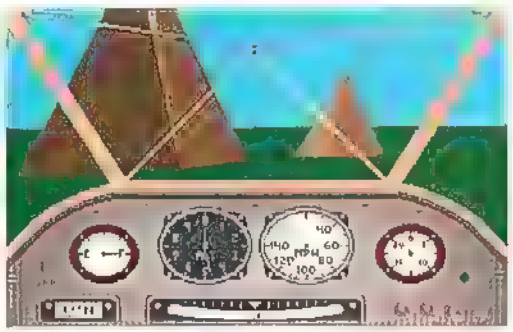
3 D Pinball	$10
3 in 1 Players Pack	$12
3D Pool	$12
Acquire	$9
Amarillo Slim's Poker	$12
Amarillo Slims 7 Card Stud	$10
Armada Villa Crespo CB	$10
Backgamma By George WIN	$9
Battle Chess 4000 SVGA	$36
Battle Chess EGAVGA	$19
Battle Chess WIN	$29
Blackjack	$12
Bridge 7	$24
Bridgemaster	$29
Caesars Palace	$9
Casino Craps	$10
Casino Game Pak WIN	$32
Casino Master WIN	$25
Casinos of the World	$29
Centerfold Squares	$21
Checkmate	$36
Chess Net WIN	$12
Chess X Colossus	$9
ChessManiac 5 Billions & 1	$48
Chessmaster 3000	$29
Classic 5	$32
Clue	$12
Clue Master Detective	$15
Cribage Gin King	$19
Dealer's Choice	$29
Dr Floyds Desktop Toys	$26
Dr Thorp's Blackjack	$32
Edward O'Thorpe Black Jack	$9
Electric Jigsaw	$12
FS-Pro	$21
Faces Tetris 3	$15
Femme Fatale	$26
Femme Fatale DD 1-3 Each	$18
Game Maker	$68
Games Master WIN	$19
Go Master Ver 5	$39
Go Master Junior Ver 5	$19
Go Master Dlx Ver 5	$69
Grand Slam Bridge	$11
Grand Slam Bridge 2	$32
Grandmaster Chess	$32
Home Alone 2	$26
Hong Kong Mah Jong Pro	$32
House of Cards	$12

Flights of Fantasy: Programming a Flight Sim in C++

by Mike "Moondawg" Weksler

A few years back, I saw a small flight simulation program listing in a computer graphics book. It was a little C program that "flew" a gunsight over a grid (superimposed over green land with a blue sky). With visions of F-16s dancing in my head, I set out to program this sim. Eighteen months, several over-my-head computer books, two C compilers, one C++ compiler, and a third party graphics library later, I completed what more or less can be described as a flying lawnmower simulation with a nice "cockpit" and a graphical user interface. It was educational and fun, but it was a much more arduous project than I ever expected.

What I really needed was a good reference book that was written at the intermediate programming level with easy-to-understand programming examples and ready-to-use program routines. My "Lawnmower Commander" was a patchwork of code from different books and programming libraries, and I remember thinking that there had to be an easier way. In fact, hacking into the wee hours, I would imagine an announcer coming over my stereo: "Does this happen to you? Can't get that poly-fill function to draw your sky? Is your gunsight permanently drawn onto the ground at some indiscriminate location that speeds by in a mocking manner? Can't get a clean compile to save your life? What you need is a book for the intermediate programmer that specifically addresses flight simulation topics!" *Flights of Fantasy: Programming 3-D Video Games in C++* is the very book my imaginary salesman would have pitched to me.



"You'll find all the essentials to create a complete working flight simulator as good as *Red Baron* or *Falcon 3*," touts the press release. Of course, this is ridiculous marketing amplification. Rather, this book is a great foundation for learning the fundamentals of C++ programming, bit-mapped graphics, 3D polygon filled graphics, and flight simulation. After reading a few of the chapters in Christopher Lampton's easy-to-read style, I soon realized that I could have written my "lawnmower" simulation in an evening with this one book, my **Borland** *C++ compiler*, and my hacker's enthusiasm. Of course, it would take staying up all night, but what programmer hasn't arrived at a clean compile with a *Carl's Jr.* breakfast burrito at dawn.

Enclosed, please find ...

Each chapter has ample C++ examples illustrated with cutting-edge rendered graphic illustrations. The book takes the reader from a graphics primer, through the fundamentals of wire-frame and poly-fill animation, right up to polygon clipping, hidden surface removal, and the use of look-up tables and integer math to speed up one's calculations. Additional chapters cover the necessary math and viewpoint translation calculations necessary to get a flight simulation off the ground. The book also addresses topics all the way from the use of C++ "classes" and "objects" to optimizing one's source code with **Borland's** *Turbo Profiler*—a tool bundled with the **Borland** *C++ compiler* which allows one to optimize code. Additionally, the PCX viewing code in the bit-mapped graphics chapter will save the novice reader from getting in too deep with a third party graphics library.

Unfortunately, there are some dry spots in this hacker's oasis. For example, the chapter covering fractal landscapes only provides a function for drawing a random jagged line across the screen, with a reference pointing the reader to more in-depth books on fractal 3D terrain generation. In other words, anyone looking in this chapter to try to figure out how to program the terrain to *Comanche: Maximum Overkill* or *Strike Commander* will be sorely disappointed. Also, the sound chapter, while providing the basics of interfacing with the *SoundBlaster*, could have provided more examples.

Fortunately, the author provides a useful chapter on basic flight dynamics and then covers the featured "*FoF*" flight simulation in depth. While not boasting gouraud shading, dithered horizons, texture mapping, nor any weapons or other aircraft to fly with/against, this bi-plane simulation is the perfect specimen with which to dissect and poke around in its guts. Especially interesting was finally learning how left, right, and rear views were programmed as well as 3D poly-filled mountains and other ground objects.

Clean Compile

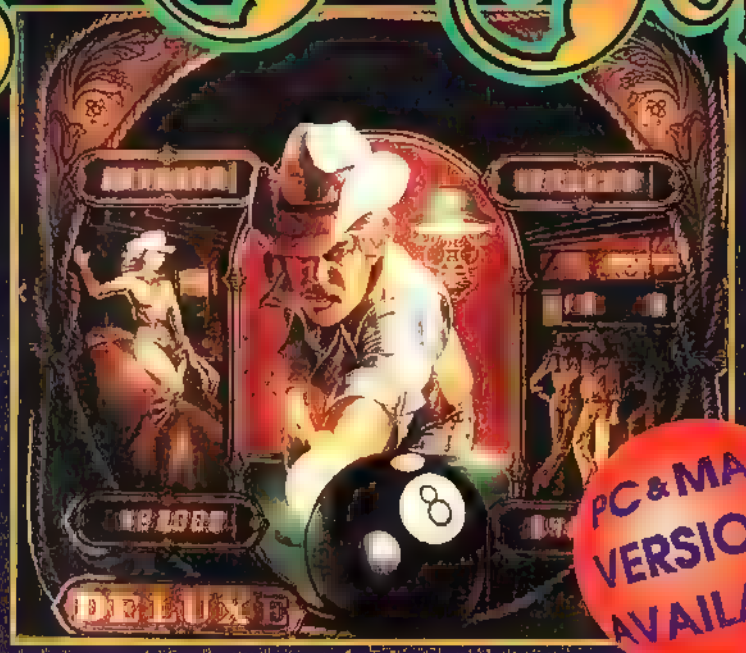
Flights of Fantasy: Programming 3-D Video Games in C++ is available from the **Waite Group Press** for $34.95. While not as complete as touted, this 556 page book serves as an outstanding reference to the novice and intermediate game programmer. The wealth of provided code (both in the book and on the provided disk), flight simulation program, and useful bibliography give the reader the foundation for further studies in this mist shrouded area. Topics of discussion pertaining to this book and code can be found in the Game Design section of the CompuServe Gamer's Forum (GO Gamers), courtesy of the "Fly by Night Group." One can find the author, Christopher Lampton, on CompuServe at [76711,311]. Hopefully, Mr. Lampton will follow up this work with an in-depth look on such topics as real time texture-mapping, 3D fractal terrain, and dithered horizons, bringing these esoteric topics into the realm of the intermediate game hacker. CGW

Bally

INTRODUCING
THE EXPERIENCE OF REAL PINBALL

Distributed By Broderbund®

Eight Ball Deluxe™



PC & MAC VERSIONS AVAILABLE

AMTEX, the maker of the award-winning and critically acclaimed Tristan™, is proud to announce the release of Eight Ball Deluxe, the world's most popular traditional pinball game. It's the first of many pinball favorites to be released in the "AMTEX Pinball Classics" series.

Eight Ball Deluxe is all the fun and excitement of the original game, captured in an awesome simulation. Amazing high resolution graphics, authentic speech, digital sound effects, plus all the mechanics of real pinball!

After chalking up, you'll bank shots, rack up bonus points, then shoot for the exciting and elusive Deluxe. All with three, fast moving flippers that allow for ball trapping and strategic shot making – a must for pinball aficionados!

Imagine all this explosive action, without waiting for a machine or the need for a pocket full of quarters. And you can play with up to four players. So relive the exciting thrills of the arcade today with friends. Over and over again!

Watch for more of the classic games you grew up with. "you big sausage!"

For product information, send your name and address to: AMTEX Software Corporation, P.O. Box 572, Belleville, Ontario K8N 5B2 or call 1-613-967-7900 Fax: 1-613-967-7902.
Suggested retail price $59.95

AMTEX™ PinBall

All trademarks are the property of their respective companies. Copyright © 1992 AMTEX Software Corporation. © 1981 EIGHT BALL DELUXE™ is a trademark of Midway Manufacturing Company (makers of BALLY® pinball games). Used under license. Midway Manufacturing Company is a subsidiary of WMS INDUSTRIES, INC. All rights reserved.

Circle Reader Service #32

Keeping Space-Time In Line

Journey Back to the Future in Presto Studios' *The Journeyman Project*

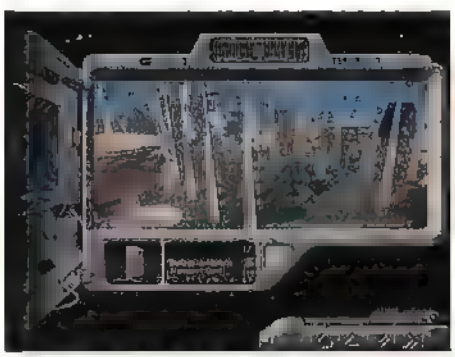
by Tony Reveaux

The introduction to the visually stunning *Journeyman Project* leads you through a smoke-filled post-atomic apocalypse where rival nations unite in a peaceful utopian sphere. The convoluted plot begins in 2318 on the skyborne city of Caldoria, where the world nervously awaits the return of the Cyrollans. These squeaky-voiced aliens have ideas of global harmony more syrupy than anything Michael Jackson had ever dreamed. Within this universe on the brink of bliss, time travel has become a workable technology, but is restricted to prevent the time stream from getting warped by irresponsible use.

The government has formed an elite guard to shield against bad times and to repair any rifts in the continuum from sabotage. The Temporal Protectorate (the gamer's employer) is headquartered in the Temporal Protectorate Annex, a top-secret bunker. Very few humans can be admitted to the controls of Pegasus, the last existing time machine. The gamer's objective is to follow whatever missions are assigned to mend the rifts in time.

Tempus In A CD

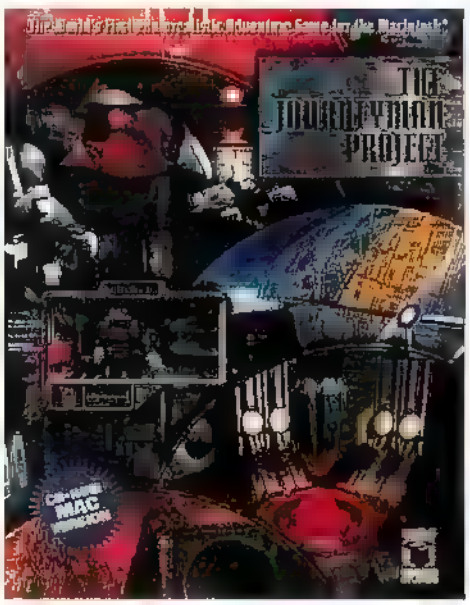
Before talking about the specific missions, however, it is necessary to touch briefly upon the interface for the game. *Journeyman*'s interface, like *Spaceship Warlock* and most other graphic-rich games, reduces the area of the action on the monitor by establishing a mechanical convention. Here, it is the narrow view-glass of the snap-on electronic monocular that is an integral part of the BioSupport Suit. Considering the weighty data chunks of QuickTime movies and sound files in *Journeyman*, it was wise to slim the window down. Even with my speedy Hitachi drive, I just had to get used to the drag-and-lag on the action as the CD-ROM data stream chugged along with long load times and slow uptakes. When the game is loading, it is impossible to move, select or save. Waiting and sweating is all that can be done.



Because each loaded sequence is a QuickTime movie, it has to cue the player to the beginning in order to run. For instance, even when saving a position at the console of the Pegasus time machine, the place where destinations are chosen, when one restores to that position, he or she has returned not to the jumpseat but back into the elevator, and will have to go through the whole entry sequence again. While the movement buttons can be activated with the mouse, the program likes the keyboard's arrow commands better. The digital compass and the mapping BioChip can help the player go home again after navigating those modular corridors and tunnels. The cursor arrow traces a path for each step taken. As handy as this is, there may be some times when it is necessary to jump before leaping while one surfs the space/time continuum. It is advised to save positions often, or suffer a thousand deaths.

Extemporizing Through The Missions

While traveling through time, a BioSupport Suit offers protection from most environ-



TITLE:	The Journeyman Project
SYSTEM:	Color Macintosh II or greater (5 MB RAM required, 8 MB RAM preferred; QuickTime 1.5, CD-ROM drive)
PRICE:	$99.95
PROTECTION:	None
DESIGNER:	Presto Studios
PUBLISHER:	Presto Studios P.O. Box 262535 San Diego, CA 92126-2535 (619) 689-4856

Free time.
Plus, you could win a trip to GenCon!

Now's your chance to sharpen your gaming skills and meet other players absolutely FREE.

If you enjoy interacting with many role-players at once, sign-on to the National Videotex Network(NVN) and try the selection of multi player games! Use the $25 credit, to get acquainted with the games and the players at no charge! Log into MUD II: The Quest For Immortality and seek to become an immortal Wizard. Or, travel the Island of Kesmai™ in a party of adventurers and seek danger and treasure. Launch a space empire in Galaxy II and conquer the quadrant, or become a historical noble in The Hundred Years War and carry out your king's will... or yours!

Don't miss a minute of action-packed play. Join now. Basic membership, including free use of over 80 basic services, is only $5.95 per month*. And, Premium services are priced at just $5 non-prime and $8 prime time...even at 9600 baud!

Win a trip to GenCon the ultimate gathering of gamers!

Your chance to meet the best gamers face to face is at GenCon, the nation's largest role-playing game faire. It happens every August in Milwaukee, Wisconsin. Thousands of the best gamers from around the country and the world, gather for four days of non-stop gaming action and questing for titles and prizes in hundreds of events.

Imagine someone paying your way. It could happen. NVN, provider of the nation's premier multi player role-playing games, and Computer Gaming World, the nation's premier computer game magazine, will send one lucky person to GenCon this year! Plus, we'll award a one-year subscription to Computer Gaming World to nine other winners.

Simply fill out the entry form below and mail it to the address provided by July 15, 1993. Then, on July 21, 1993, at 9pm (Central time zone) on the NVN Multi-Player Games Forum, we'll hold a drawing and announce a winner. You don't need to be present to win, or even a member of NVN; we'll notify the winner by phone and mail.

Here's what the GenCon winner will receive:

- 5 days/4 nights of hotel accommodations, from August 18 - August 22, 1993, in Milwaukee, WI, site of the annual GenCon Game Faire.
- Round trip airfare from anywhere in the continental U.S. to Milwaukee.
- A four day gaming pass to GenCon.
- One full year subscription to Computer Gaming World.

Join NVN now and save $25!

We'll give you $25 in usage to explore games and other NVN premium services. Set your 1200, 2400 or 9600 baud modem and dial **1-800-336-9092** At the appropriate prompt, type the code **CG93RR** and press <return>. For more information or to order by phone, call: **1-800-336-9096**

Contest Entry Form

Name: _____ Age:____

Address: _____

City/State/Zip: _____

Day Phone: (____) _____

Evening Phone: (____) _____

Do you own a computer and modem? _____

RULES:

1. Persons of any age can enter. However, winners under the age of eighteen (18) years must travel with a parent or legal guardian at the event's expense, to collect the grand prize. Signature of parent or legal guardian may be required to collect the grand prize.
2. Employees and contractors of National Videotex Network, U.S. Videotel, Golden Empire Publications and the family, affiliates and subsidiaries are ineligible to win prizes.
3. This contest is void where prohibited by law.
4. Contest winner will be drawn at random from all entries. Odds of winning the top prize will depend on the total number of entries.
5. Only one entry per person allowed, sorry!

MAIL ENTRY TO: National Videotex Network, Product Mgmt., 5555 San Felipe, Suite 1200, Houston, TX 77056

Sponsored by:

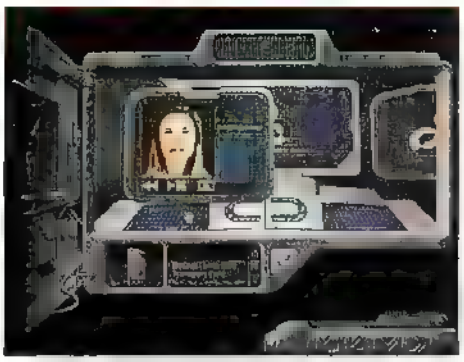
COMPUTER GAMING WORLD
The Premier Computer Game Magazine

MUD II™
The Quest for Immortality

NATIONAL VIDEOTEX

*Subscription fee is $5.95 per month. Prices and service content are subject to change. NVN is a mark of the National Videotex Network, Corp. MUD II is a copyright of MUSE, Ltd. All others are marks of their respective companies/organizations.

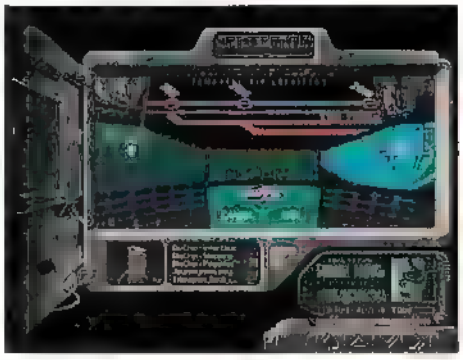
Circle Reader Service #106



mental hazards, as well as inventorying acquisitions and monitoring energy levels. Every second spent questing burns up energy, so one must remember that the meter is running and time may simply run out while the player's character hoofs through history. The first goal is to hop back 200 million years to retrieve a time log disc, then return to the Annex to enter its temporal coordinates into the machine. This is to check against any discontinuities in history.

One must also be careful not to cause any glitches while traveling; upon each return the player must check that there aren't any warps in the grooves. In the Sydney Australia mission, it'll be tough darts if a player can't get his or her genes together. The Mars Colony mission requires a lot of energy to keep up with uppity robots and not bomb out. The ship may finally be coming in for the alien watchers, and it could be up to the player to make sure the Cyrollans have a happy landing. The Norad VI mission can be the most touch-and-go, with a missile that just doesn't want to say no.

It does make a difference which sequence is taken on missions, and some of the objects one acquires in one mission may be vital to survival in another. The complex environments of *Journeyman* are believably fantastic, and the solidly rendered and polished machines, vehicles, devices, tools, keys, doors, controls and robots work with convincingly precise action (though some devices may need an extra mouse-nudge or two). The excellent sound effects sharply support and underscore the dramas as one grapples with new and unpredictable catastrophes.



Extemporaneous Conclusion

Journeyman is a challenging, take-no-prisoners game, as tough as they come with its many logic puzzles and its no-instructions, no-returns machineries. It is all the more rewarding after puzzling past each conundrum. For these new realms of the CD-ROM graphic adventure game, perhaps its time to draft new rules. This is different country than the text-adventure game or even the *Ultimas* of action gamers. There is plenty of room on the disk to include complete hints and answers for those who want them when they need them. To see glimpses of these fully rendered worlds and not be able to enter them is like paying for a cruise and getting stuck in the cargo hold. **CGW**

THE ULTIMATE ROLE-PLAYING AID

Introducing **The Ultimate Character Editor.** This exciting new product features full mouse and keyboard support, online context sensitive help and a complete windowing system (does **not** require MS Windows to run). This editor allows you to edit most of the games listed below (including all of the Might and Magics, all of the Ultimas, all of the SSI games, all of the Bard's Tales, and more). The price for this editor is $59.95. So, for the price of 3 editors, you will be getting approximately 30 editors. Upgrades will be available to handle new games as they are released for only $9.95.

- **CHARACTER EDITORS — $19.95 each**
  Might and Magic (1, 2, 3 or 4), Drakkhen, Pool of Radiance, Hard Nova, Bard's Tale (1, 2 or 3), Wasteland, Dragon Wars, Space Rogue, Wizardry (Edits 1-3), Wizardry 4, Wizardry 5, Bane of Cosmic Forge, Crusaders of the Dark Savant, Treasurers of the Savage Frontier, Sentinel Worlds I, Knights of Legend, Secret of the Silver Blades, Curse of the Azure Bonds, Champions of Krynn, Space 1889, Keys to Maramon, MegaTraveller (1 or 2), Keef the Thief, Darklands, Escape from Hell, Ultima (3, 4, 5, 6 or 7), Dark Heart of Uukrul, Savage Empire, Tunnels and Trolls, Lord of the Rings (1 or 2), Countdown to Doomsday, Martian Dreams, Eye of the Beholder (1 or 2), Death Knights of Krynn, Fountain of Dreams, Magic Candle (1 or 2), Pools of Darkness, Ultima Underworld, Twilight 2000, Planet's Edge, Dark Queen of Krynn, and Prophecy of the Shadow.

- **HINT BOOKS — $9.95 each**
  Might and Magic 1, Knights of Legend, Curse of the Azure Bonds, Champions of Krynn, Legacy of Ancients, Dark Heart of Uukrul, Wizardry (1, 2, 3, 4, 5, Bane or Crusaders), Eye of the Beholder 2, Might and Magic 3 (12.95).

IBM listed. Apple, C64 and Amiga versions also available.
Please add $4.00 for shipping and handling.
Open from 9AM - 9PM every day for your convenience.

VISA **GOSSELIN COMPUTER CONSULTANTS** MasterCard
P.O. Box 1083 • Brighton, MI 48116 • (313) 229-2453

Circle Reader Service #61

Entertainment Software Consultants

Is Seeking Qualified Candidates
for a Progressive, New Entertainment Software Producer
In Southern California

Interested Applicants Should Apply
For the Following Positions

Computer Programmer
(MS-DOS based)

Graphic Artist

Music/Audio Effects

applicants should send a resume and brief letter of interest
listing applicable commercial projects to:

Entertainment Software Consultants
8780 19th Street, Suite #336
Alta Loma, California 91701

Highly Competitive Compensation
Confidentiality Assured
All Applications Will Receive a Response

Circle Reader Service #52

SOUND GALAXY

IT WAS AS IF YOU WERE IN THERE!

Forget about a primitive game session where gunning down a jet fighter or running away from a fire breathing dragon creates a dumb effect. And you reacted because you see it coming. If not, it's a game over for you.

CD-QUALITY SOUND
Sound Galaxy NX PRO Extra change all that See and Do by giving you a whole new generation of sound technology that promises you superb CD-quality sound that match the best amplifiers and full stereo capability.

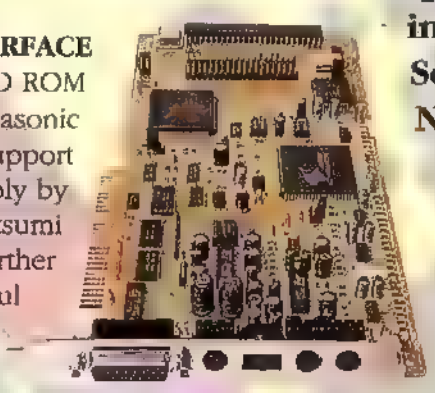
SUPPORT MORE SOUND STANDARDS
Let yourself go ga-ga over the full sound support for AdLib, Sound Blaster Pro, Covox Speech Thing and Disney Sound Source. And you find yourself hacking away the jungle of games and entertainment software available under both DOS and Windows environment.

MORE CD-ROM INTERFACE
Besides the built in AT-BUS CD ROM interface support for Mitsumi and Panasonic drives, the NX PRO Extra can also support the Sony AT-BUS CD-ROM drive simply by plugging the SG adaptor to the Mitsumi interface. It can be further upgraded to more powerful SCSI CD-ROM drives.

EASE OF INSTALLATION
All configuration settings are via software without the hassle of setting jumpers.

VALUE FOR MONEY
Topping it all are the bundled software such as Monologue for Windows, Voyetra Audio Station & WINDAT™ OLE, just to name a few, so that you can edit audio, animate and create stunning graphics on screen. And not forgetting the free speakers that allow you to blast yourself to glory as you see your scores chalking up.

So step into the world of imagination with Sound Galaxy NX PRO Extra.



Call us : 1-800-886 8859

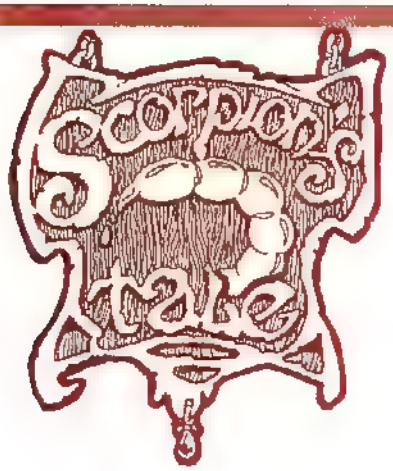
SOUND GALAXY

Circle Reader Service #34

AVS GROUP

U.S.A. Office : **AZTECH LABS, INC.** 46707 Fremont Boulevard, Fremont CA 94538. U.S.A. Tel (510) 623-8988 Fax . (510) 623 8989
Head Office : **AZTECH SYSTEMS PTE LTD** 31 Ubi Road 1, AVS Building, Singapore 1440. Tel (65) 741-7211 Fax . (65) 741 8678/9 Tlx 8536560 AZTECH

All trade names & marks are registered trademarks of respective company. Specifications subject to change without prior notice.



SCORPIA FEELS THE PINCH OF UPGRADE ULCERS

This time around, we aren't going to be looking at a game. No, this tale is a cautionary one: Life On The Edge, or The Perils of High-Tech. Fred, get the refreshments ready. I'm gonna need it after reliving this experience!

Sharp-eyed readers noticed that the April (#105) issue had only one instead of my usual two articles. The Mail column was present, but the View was rather conspicuously absent. There was a reason for that. In order to play a computer game, one needs that indispensible item, a computer system. For much of January, I was without that essential little item and *this* is how it happened.

As the end of '92 approached, I re-assessed my current system, a 386/20 with 2 megs of RAM and a 40 meg hard drive. There was no doubt about it, I needed more horsepower, more memory, and more drive space. In short, a new system entirely.

This didn't exactly thrill me. In '88, I bought my first MS-DOS machine. Only two years later, I was buying a 386. Now, I had to upgrade again. Three systems in four years is no joke, especially when your livelihood depends upon staying up with the current games and you don't have much choice. So, I went shopping for a system I hoped would last, maybe (hah!) a little longer than the usual two years.

It seemed to me that a 486/50 with 8 MB of RAM, 120 MB hard drive, and local bus video would be just the thing. I could get such a system at the local store, for a good price. The one hitch was the local bus video (VLB). Up to that time, all the VLB's were proprietary. Each manufacturer had their own way of doing it, and provided the necessary video card.

Of course, if the card was unsatisfactory in any way, you were stuck: either use that card or go back to an "ordinary" 16-bit video card. This did not appeal to me. Also, several independent card manufacturers were beginning to advertise VLB cards, and these had to be generic. How could you use a generic card in a proprietary slot?

Naturally, you can't. However, just at that time, the VESA standard for VLB had gone through. No more proprietary slots; everyone would use the same technology for local bus (at least supposedly). Therefore, any decent VLB card from any manufacturer would work, thereby allowing choice. That *did* appeal to me.

The end of the year is always a confused period, and the changeover to VESA added to it. Everyone was retooling their motherboards for the new standard. I would have to wait a little while, but it was only supposed to be about two weeks or so. In the meantime, I arranged for some friends of mine to buy the 386. They were a little hesitant to take it when the replacement wasn't on hand, but I reassured them it was okay. I could tough it out for a couple of weeks, and no major games were on the horizon anyway. Had I but known ...

So, the Tuesday after New Year's, I check in at the store, everything seemed okay, and we put the order in. Then we learned something: VLB doesn't work in a 50Mhz machine. On a 486/25, or a DX2 25/50, or a DX2 33/66, yes. On a pure 50, nope. Standardization, don'tcha' just love it? Well, the 66 didn't cost much more than the 50, and besides, the way technology has been rocketing along, maybe it was better to get the fastest machine. We switched the order to a 486/66, and then I trundled home to my cave to wait out the two weeks.

It was a little weird, looking over at the empty table where the 20 used to sit. It was even weirder, not playing any games. At least I got caught up on some reading, and I still had my trusty Apple IIe so I could log on to the nets. For some reason, though, I was feeling a little restless.

The two weeks passed, and I managed to live through it. Then, the great day arrived: the system was waiting in the store. Yay! Naturally I hurried right over there. They opened up the case, plugged in the video card, and turned on the system.

Nothing happened.

Unfortunately, the in-store machine was a 486/50, so we couldn't test the card on it (but we did anyway, with the same result, which meant nothing). So they took the 16-bit card from their machine and put it in mine. The system came right up. *That* was a relief, but still ...

Phone calls are made. One to the computer manufacturer (the manual was a little, umm, indecipherable on some points, ahem). No, nothing needed to be done to enable the VLB; it was set and ready. Any VLB card should work after being plugged in. Hmmmm.

Then, a call to the card manufacturer. This was more involved, and less satisfactory. Finally, we get to someone who seems to know something. "Oh, the OPTI chipset? We've been having some problem with those" (and a few others, as it turned out later). "We're working on a new chip right now." Of course, they can't say when it will be ready, but "soon."

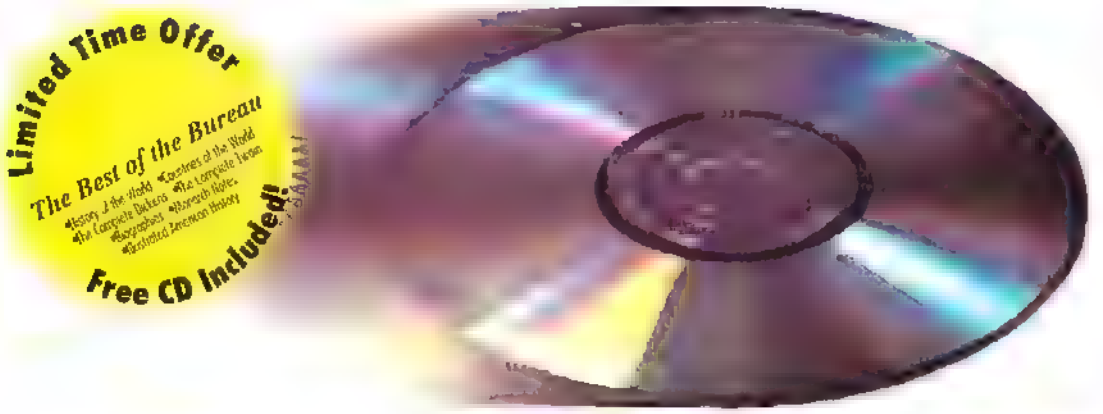
Now what? Wait for the new chip, or send the card back and get another one from someone else? Presuming, of course, that someone else has a card ready. And what if that card has some problems? This is the first of the first generation VLB cards, which makes it all pretty chancy. Let's wait.

Another week goes by. The chip arrives. It turns out to be exactly the same chip that is already on the card, and doesn't work any better. More calls to the card manufacturer. More confusion. Apparently there isn't any "upgrade," this is their only chip.

Enough is enough. Send this turkey card back to them. VLB can wait. *I* can wait until this whole situation settles down, and I know for sure that I'll get a card that works. So, now the store orders a regular 16-bit card for the interim since we know that it will be okay. It arrives in a few days and once more, we start testing the system out, one card at a time. Everything works. I breathe a sigh of relief.

(Continued on page 100)

Wing Commander Flys Faster!
Sherlock Solves Faster!
Carmen Sandiego's Found Faster!



Lightning CD Runs All Your CD's Faster!

Do you feel the need for speed?

If you've ever played a game or searched through a reference library, you know how slow CD's can be.

Lightning CD is the answer to your speed problems. Lightning CD is a CD cache that improves performance by moving frequently used information from your CD to RAM. The next time your computer needs information, it's available immediately. You'll notice the difference instantly.

Lightning CD

- Is perfect for entertainment, reference, educational, and multimedia programs
- Significantly reduces annoying video pauses
- Includes six other powerful utilities for improving your computer's performance
- Also speeds up both DOS and Windows programs

If speed is what you need, get Lightning CD to make all your CD's run Lightning fast. To order, or for the name of the dealer nearest you, call

800-967-5550

Look for Lightning CD and other Lucid products at

BEST BUY · COMPUTER City · THE COMPUTER SUPERSTORE · EGGHEAD SOFTWARE

LUCID CORPORATION

Lucid Corporation is located at 101 W. Renner Road, Suite 450, Richardson, TX 75082. Phone 214-994-8100. Fax 214-994-8103.
Lightning, Lightning for Windows, Lightning for DOS, and Lightning CD are trademarks and Lucid is a registered trademark of Lucid Corporation. All other trademarks are acknowledged.

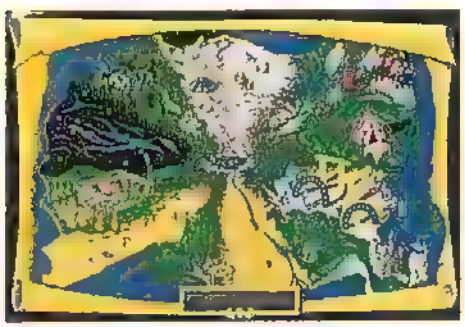
Circle Reader Service #71

Lemming On The Edge

Psygnosis' *Lemmings 2: The Tribes*

by Saul Serrafina

It's always a bit disconcerting when cold reality rudely intrudes on an involved gaming session. There I sit, my entire being enveloped in a universe, the most important thing in my life being that *this* pixel goes *there*, and Life seeps through a drafty cerebral window. As I save another band of lemmings in Psygnosis' new *Lemmings 2: The Tribes*, I realize that I've safely tucked away more lemmings this month than dollars in my savings account. I've certainly done more to further the digital existence of these creatures than I've done for a real dying species. And I've definitely invested more thought into their salvation than into my own pitiful soul. Do I pause (or "paws" in lemmings parlance) to reevaluate my existence? Do I turn off my computer and write a letter to my congressional representative? Hardly. I plod on stupidly but happily, blind to my fate, hoping that some kind deity will see fit to clear my path of nasty impediments and deadly falls, just as I clear the paths of the stupid but happy creatures on my screen.



I'd like to think my weakness with regard to these cute creatures is due to the design skills of DMA Design and Psygnosis rather than any weaknesses in my character. These folks have done a first rate job with this sequel to a first rate original game. We've all known the disappointment of sequels, which tend to be hasty and uninspired attempts to cash in on the spirit of a successful original, but *Lemmings 2* really is twice the game its predecessor was. *Lemmings 2* sports a dazzling new variety of graphics, sound, lemming antics and fiendish puzzles, along with interface tweaks that make playing much more lemmer-friendly.

Meet George Lemming

For those who haven't had the pleasure of meeting this delightful pet, the lemming of the computer variety is a small (approx. 20 pixels), cute (green buffonts that bounce with their That Girl stride), incredibly stupid (approx. 20 I.Q.), yet gifted with extraordinary innate skills. They are known to build stairs, dig ditches, bore tunnels, scale precipitous cliffs, and even explosively self destruct through the force of their will. They live in a remarkably perilous environment, and would have long gone extinct but for the efforts of many tireless gamers who the lemmings are thought to worship as deities. From a lemming command chair, empowered with a mouse, glorified gamers command the lemmings to perform the different tasks within their repertoire. If the lemmings are fortunate enough to have a quick-witted gaming deity, they will be able to avoid the certain death that lurks everywhere in their world and arrive safely at their homes.

The Origin of the Species

This is the lemming gamers have known, loved, and "nuked" with a grin. But these creatures have changed a bit since we've last seen them — in fact, they've mutated in many odd ways. In *Lemmings 2*, gamers will discover an island off the coast of Sequelia that has been biologically isolated for many software seasons. On this gaming Galapagos several species of creatures can be found that are genetically descendant from the original lemming. Due to the bizarre geography of the island (divided into 12 pie pieces) and the widely divergent ecosystems to be found there, the Basic Lemming (*joeblowus lemmuricus*) has speciated into 12 distinct types. The forces of selective market pressure have yielded the most bizarre of adaptations. The types discovered include Circus Lemmings (*lemurica slapstikus*), Sports Lemmings (*bruce genericus*), Beach Lemmings (*grand kahoonicus*), Polar Lemmings (*ididoroticus*), Medieval Lemmings (*brave-sur-robinicus*), Highland, Egyptian, Shadow, Space, Outdoor, Classical and Cave Lemmings.

Each of these lemming types brings distinct skills to the party. The Space lems zoom about with jet packs, the Cave lems wield huge clubs that bash through walls, and Beach lems shoot the tube on surfboards. All totaled, there are 55 different skills, up from eight or so in the original! Overkill? Perhaps, but this variety makes for very challenging play. Just when one feels comfortable with the skills available on a level, the skills get shuffled up and new ones must be learned. Though a bit overwhelming at times, the new and constantly changing skills keep the game fresh, which is important in a game with over 120 levels.

These levels are divided into 12 groups of 10 — one group for each of the tribes. Each tribe offers a self-contained series of puzzles with their own delightful graphic look and distinct lemming antics. *Lemmings 2* is different from the original in that there is no predetermined number of lemmings that must be saved to complete a level; rather, there are three tiers of success. If the player botches a level and saves only a few lems, he or she is

TITLE:	Lemmings 2: The Tribes
SYSTEM:	Amiga; IBM
GRAPHICS:	VGA/MCGA
PRICE:	$59.99
PROTECTION:	None
DESIGNER:	DMA Design
PUBLISHER:	Psygnosis Brookline, MA (800) 438-7794

Whether it's the menacing snarl of a chainsaw or the banshee scream of your F-1 Tomcat, just remember: *it isn't real.* Until you hear it on a Sound Blaster.™

Sound Blaster fidelity adds a whole new dimension to PC games, not to mention multimedia and other applications. And Sound Blaster is compatible with more of your software than any other audio card. *No wonder it's the best selling sound board of all time.*

So when you're ready to hear what your games *really* sound like, get in touch with your Sound Blaster dealer today. Or call us direct at 1-800-998-5227. Or we may just have to send Bruno over to persuade you.

From games to stereo multimedia to full-blown, CD-quality 16-bit Advanced Signal Processing audio... we've got the Sound Blaster for you.

© Copyright 1993 Creative Technology Ltd. Sound Blaster and the Sound Blaster and Creative Labs logos are trademarks of Creative Labs, Inc. All specifications subject to change without notice.
International inquiries: Creative Technology Ltd., Singapore. TEL 65-773-0233 FAX 65-773-0353.

Sound BLASTER™ CREATIVE™
CREATIVE LABS, INC.

You never heard it so real.

awarded with a bronze medal. Saving them all earns a gold, while mid-range success earns a silver. Also unlike the original, there is a grander scheme to the game. If one loses, say, 10 lemmings on the first level of a tribe, there will be 10 less on level two — one's success carries over from level to level. The object is to complete the puzzles in each tribe level with a gold medal, which might be one of the more challenging tasks in computer gaming. Each of the tribe's medals is a piece of a talisman. In the game's fiction, the talisman must be reconstructed so that the lemmings can make a grand Exodus on an Ark and escape the coming End of the World. *Lemmings 2* is truly a game of biblical proportions.

The Way You Do The Things You Do

The interface is basically the same as in the original game: One still chooses lemming tasks from a menu across the bottom of the screen, and one still assigns the tasks by clicking a cursor box on the individual lemming. One interesting addition, probably borrowed from Psygnosis *Creepers* game, is a "fan" cursor. With the fan, the player can blow certain flying or air ballooning lemmings around the screen. The best new addition is the Fast Forward command that marches the lemmings in double-time and eliminates any dead time in the puzzles. Level passwords have been thankfully done away with and replaced by a game saving option.

On the Level

The puzzles have been lovingly designed and ooze cute out of every pore. The lemmings even die adorably, and there are new and vicious ways for them to be killed: gobbled up by ravenous creatures, gunned down by battlemech robots, and mutilated by other more demented devices. The potential size of the levels has increased; one can now not only scroll the screen horizontally but laterally as well. As in the first game, some of these puzzles require superhuman feats of coordination to master. New players should be warned: though furry and friendly, this game isn't going to curl up in your lap and purr.

Everything about *Lemmings 2* squeaks of quality: the delightful animations, the clever puzzles, the sound track with original music for each tribe, the people-friendly interface. The package even includes a brilliant little novella that tells the story of Lemming Island in a style that melds A.A. Milne and Douglas Adams — it's classic Brit wit. In the final analysis, puzzle lovers who don't mind being beat over the head with a Cute Club, and don't mind beating their own heads over difficult puzzles should find *Lemmings 2* to be one of their better purchases of the year. **CGW**

Up a Creek Without a Kayaker Lemming?

Don't nuke another helpless creature. The first CGW hint disk is now available, offering gold medal solutions for all 120 levels in *Lemmings 2*. Step by step walkthroughs will lead you to a complete talisman and the admiration of thousands of green haired furries.

Send check or money order for $6.00 to:

Luv Doze Lemmings!
P.O. Box 730
Yorba Linda, CA 92686-9963

Please specify 3.5 or 5.25 inch disks.

CAPE COD CONNECTION

24 HR ORDERING (only) 1-800-729-6733
SUPPORT/INFO 1-5 EST Mon-Sat 1-508-457-0738

IBM SIMULATION

Aces/Pacific	$52
Air Warrior	$49
Commanche	$46
Comm. Data	$26
Dreadnoughts	$46
F15 III	$59
Falcon 3.0	$52
OpFlying Tiger	$26
Fireteam 2200	$29
Gr.Naval Bat's.	$46
Gr N Bal Ships	$25
Jump Jet	$46
Sec Weap Lut	$46
Plane disks ea	$20
Sim Life	$46
Task Force 42	$46
X-Wing	$46
Wing Cmdr 2	$49
Strike Cmdr	$52
WW II: 1946	$26

IBM STRATEGY

Bat. of Destiny	$39
Caesar	$39
Carrier Strike	$46
Carriers/War	$46
Castles 2	$39
Civilization	$46
Conq. Kingd	$39
Patriot	$46
High Comman	$45
Liberty or Dea	$39
Monopoly Del	$39
Pacific War	$52
Populous 2	$39
Rome	$33
Spaceward Ho	$39
Star Legions	$39
The Lost Adm	$39
V For Vict 1	$46
V For Vict 2	$46
Viking Fd Conq	$39
Western Front	$39

IBM ROLE PLAYING

A&D Unl Adv	$39
Amazon	$46
Ch. 5 Realms	$46
Crus Drk Sav	$46
Dune 2	$39
Lemmings 2	$39
Eye Beh. II	$39
KQ VI	$52
Leg. of Valour	$39
Mag Candle 3	$39
M&Mag. Xeen	$46
Palad n 2	$39
Protostar	$46
Ringworld	$39
Spelicraft	$39
Ult. Underw 2	$52
Ult. VII	$52

INTERESTED IN SELLING YOUR USED SOFTWARE?
Give Cape Cod Connection a call at 1/508-457-0738 for details!

CAPE COD CONNECTION WILL SELL YOUR USED SOFTWARE

We hope you enjoy our new economical format. All remains the same, however except we have discontinued the Membership Option (we will honor members until their expiration date). PLEASE NOTE THAT CCC HAS ENDED THE PRICE WAR AND RAISED IT'S PRICES. In order to run an efficient and economically sound business we must see profits. It's time to put sanity back into this industry and we hope you, our customers understand our needs and support us. Our NEW pricing scale is calculated on 35% OFF Product Retail. Mail should be sent to: 21 Pleasant View Avenue, Falmouth, MA 02540. UPS Shipments within Cont. U.S. are $5 per order. Overseas rates are based on package weight. Defective software replaced with same only. There is a 15% restocking fee.

Circle Reader Service #39

LOOKING FOR A SPORTS TITLE? CALL FOR CURRENT PRICING AND SAME DAY SHIPPING.

THINK SPORTS

THE PLAYBOOK OF SPORTS-RELATED SOFTWARE

If you're a computer sports fan, you want to know what software is available, how similar titles compare, and you want the latest releases at attractive prices. That's why our complete Playbook describes dozens of strategic simulations, awesome action games, and specialized utilities from little known sources. We want to be your source for hi-tech sports. The Playbook is free with all phone and mail orders.

ACTION
CALENDARS
CARD COLLECTING
GAMES
HANDICAPPING
TRIVIA
SIMULATORS
STATISTICS

BASEBALL
BASKETBALL
BOWLING
EDUCATION
FISHING
FLIGHT
FOOTBALL
GOLF
HOCKEY
HORSERACING
MOTORSPORTS
OLYMPICS
SAILING
SKIING
TENNIS

CEREBEL
800 747-0908 • 617 576-6700
675 Mass Ave • Cambridge MA 02139

TAKE YOUR BRAIN OUT TO THE BALLGAME

Circle Reader Service #40

FLASHBACK

Action so life-like, you'll have to keep reminding yourself it's only a game.

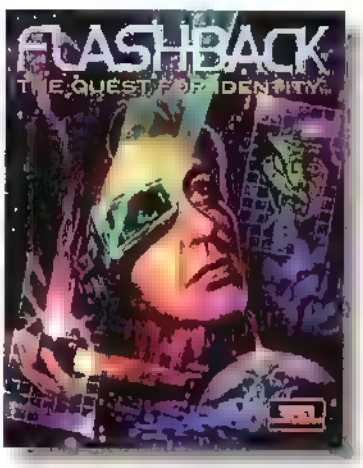
And not a movie.

That's because *Flashback* is the only action adventure game that uses movie-making technology to the max. We filmed real actors in motion. Then we brought everything to life on the computer through *rotoscoping*, the digitization and retouching of live action film — *at 24 frames a second!*

What's it all mean? Simply the smoothest animation ever! Run, jump, roll or stagger — with incredibly subtle and fluid movement. Fire your weapon and watch your body recoil with remarkable realism!

Step into this awesome cinematic experience as Conrad B. Hart, a scientist who's made a horrifying discovery: Earth has been infiltrated by shape-shifting aliens bent on world conquest!

To save Earth, you must fight through three fantastic worlds and 200 game screens! Solve dozens of mind bending puzzles. Get your cues from over 75 fully animated cinematics



Like a great movie, Flashback combines an intricate plot, exciting music score, superb sound effects, spine-tingling suspense and dynamite action.

Flashback. Now playing at a movie theater... er, game store near you!

IBM TO ORDER: Visit your retailer or call 1 800 245-4525 with VISA/MC (U.S. and Canada only)

Creation and development Delphine Software International
©1993 Delphine Software International
© 1993 U.S. Gold Ltd.
© 1993 Strategic Simulations, Inc.
All rights reserved.

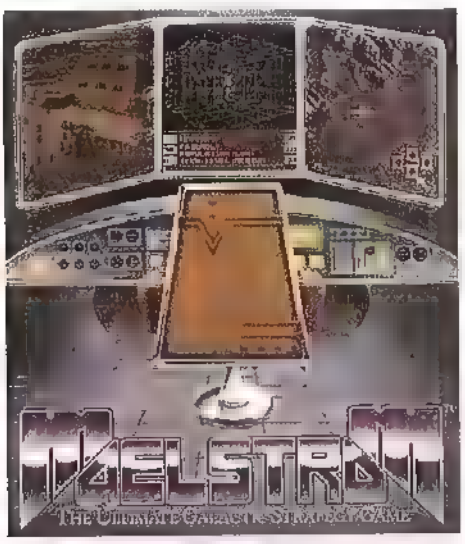
Ride the Winds of the Maelstrom

Merit Software's *Maelstrom*

by Douglas Winship

The obvious assumption when first stepping into the *Maelstrom* is that this is another thematic reprise of such games as *Spaceward Ho!* or *Reach For the Stars*, an explore-and-conquer game of intergalactic empire building. Not so. As the name suggests, this real-time game throws the player into an oftimes bewildering array of less than straightforward challenges. Furthermore, almost nothing is as it seems in this universe, whether threat, opportunity, or (more commonly) both. While the player is learning to ride the winds of the storm, the animated sequences of enemies overrunning planet Harmony appear all too often and not always for obvious reasons. Fortunately, once the storm is mastered, it's an exciting ride.

Maelstrom takes place in a post-war galaxy, populated largely by independent planets. Peace is being threatened anew, however, by a new and malevolent super-power, the Syndicate. A renegade former agent of that empire (the player) has defected to lead the defense of Harmony, a third-rate power whose conquest by the Syndicate would spell disaster for the free galaxy. Harmony may be small and weak, but it is very wealthy, and it is the player's job to exploit that wealth to end the Syndicate threat forever.



TITLE:	Maelstrom, The Ultimate Galactic Strategy Game
SYSTEM:	IBM
GRAPHICS:	VGA
PRICE:	$69.95
PROTECTION:	Documentation look-up
DESIGNER:	Andy Blau
PUBLISHER:	Merit Software Dallas, TX (214) 385-2353

With its tiny population, Harmony cannot stand alone against the Syndicate. The player must form a coalition with the other threatened planets, sometimes rescuing those that have fallen prey to the evil empire during the course of the game. Harmony must remain free long enough to attract sufficient money and manpower from the other free planets to mount a force that is able to deal a death blow to the Syndicate headquarters—wherever that is.

The player runs Harmony from the Executron 1200 Holodesk, which provides information and communications facilities. The player can converse with Harmony's department heads and VIPs on other planets and is provided with background information files on them. As the game progresses, new characters are discovered, and the files of known persons are updated. One of the most important responsibilities of the player is reviewing resumes and hiring and firing the ship's officers, mining foremen and other middle management types. Finally, the player must issue orders to one or more of the executives and assign sufficient staff and budget to the project. The labor force is the most critical commodity in *Maelstrom*. It is very hard to get more, and the military can "spend" much of it in a hurry if a battle is lost.

The government of Harmony has four departments at the player's disposal: Mining, Research, the Military, and the Secret Intelligence Network. Each is critical to the outcome of the game, and their respective demands for budget and human resources must be carefully balanced and adjusted throughout the game. We'll look at each in turn, from least to most complex.

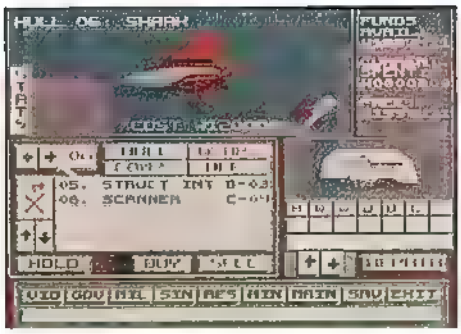
Puttin' On The Fitz

Firzholnium tri-gem ore (Fitz) is the heart of Harmony's economy, the reason for its peril, and its primary defense. The planet is essentially a gigantic lump of this hyper-volatile fuel and munitions ingredient. The main reason that the Syndicate has not just bombarded Harmony into submission is because said action would almost certainly set off a chain reaction destroying the entire planet, including three-fifths of the galaxy's Fitz. (No need to feel safe though, the Syndicate is surely working on a way around this...)

Harmony begins the game with two working mines, but scores more are needed to supply the money to fuel an offensive war machine. One must survey the planet to find the most concentrated ore patches; then, hire mine foremen to exploit them. Each mine's efficiency is totally dependent on the quality of the foreman hired to run it. In time, mines become unprofitable or even peter out altogether, so routine monitoring is a must. The mining department will provide the fewest surprises during the game, but those it does provide are very valuable. Mining is very labor intensive and is not a renewable resource, but it is lucrative. Ships cost a lot of money, and Harmony needs a lot of ships.

Marching On Dow Chemical

While Harmony must buy most of its weapons, defenses and computers from other neutral planets in the galaxy, especially early on, it does have a small but motivated R&D department. Top and not-so-top scientists are available to lead research in a variety of scientific fields. Again, the quality of these employees dictates how likely they are to succeed in each project they undertake. Research labs will provide new weapon systems that can either be kept in-house or sold as patents to the major arms manufacturers for big cash payments. Unsold weapons cost less to buy and are unavailable to the rest of the galaxy. R&D will also produce various other inventions of various degrees of usefulness to other



departments. The utility of some inventions will not be immediately obvious, and others are just plain silly. Once the player has developed a blend of ongoing research into the fields that interest him and found top-notch brains to run each project, research can be safely left to run itself until it eventually starts to repeat its inventions.

Prattle of a Major General

The Military is the biggest, most labor intensive, most executive intensive, and most expensive department on Harmony. A strong navy is necessary to protect Harmony from pirates and the Syndicate and to protect, or even free, allies and neutral planets from the bad guys. The navy also provides transportation to Harmony's secret agents, a cheap but very important service. Players will spend half or more of their time at the military screen.

Each ship must be custom-equipped from a wide array of hulls, weapons, defenses, and battle computers. It must then be assigned at least one executive (the captain), and unless it is a courier, it should really have two others. If the quality of employee is important in mine foremen and scientists, it is 100% critical in the case of naval officers, especially captains. A capital ship costs almost a month's mining income and its crew may consume up to 10% of Harmony's precious available labor. An incompetent captain will not survive a battle, and more importantly, neither will his expensive ship.

The battle module in *Maelstrom* is pretty simple. The player has a limited ability to intervene in a skirmish, primarily through target and weapon selection. Wounded ships can also be ordered to retreat or enter a defensive mode to minimize casualties, although the temptation to get off one more shot with a wounded vessel is often both overwhelming and ultimately expensive. The player may elect to let the computer run his battles for him, but this is not wise. Skill at the battle screen won't be able to make up for poor play elsewhere, but poor battle play can negate otherwise good play.

Secret Agent Scam

The Secret Intelligence Network (SIN) is the key to *Maelstrom*. SIN is responsible for all the dirty tricks that make being Overlord fun and ultimately successful. SIN is also responsible for thwarting the efforts of Syndicate saboteurs on Harmony, though this last job is out of the player's control. If SIN has a large enough chunk of the budget, Harmony is mostly sabotage-proof.

All other missions must be determined by the player and will be assigned to the first available agent. Though agents are hired like executives in other departments, the early missions do not require as high quality agents as in other departments. Later, the quality of agents does become an issue, but fewer are needed. SIN agents are responsible for most of the surprises in the game.

With a ride from the military, SIN agents travel to other systems, even Syndicate homeworlds, to discover any information previously undiscovered there. This searching needs to be repeated as the game goes on, as things change. These recon missions can become exciting should the agent discover a Syndicate base. If a VIP from somewhere, even Harmony, is kidnapped, then SIN needs to act fast to rescue him or her. SIN agents also are propaganda masters who can travel to neutral planets and stir up public sympathy for Harmony. If they are successful enough, the leader of the planet may elect to offer direct aid to Harmony. SIN is cheap and easy, but the player should not get careless because of this. It should be used only where necessary, and only the best agents should be used on high risk insurgency and rescue missions.

There are a number of hidden treasures spread across Harmony and the Galaxy. These items are in the same place each time, and the player should note where they are so they can be found earlier in the next game. Also, certain of the more complex events happen in every game, but their timing is never the same from game to game, so the player must learn to recognize the signs that one event or another is about to take place and react appropriately. Enough random actions occur to keep things fresh from game to game.

Stormy Matters

Maelstrom has an attractive user interface based almost entirely on the mouse. The only time the player needs to touch the keyboard is when entering a new savegame name, and even then there is an on-screen keyboard for die-hard rodent pushers. All in all though, the interface is *Maelstrom*'s main weak point. The game is simply so big that there are times when the player needs more information than can be displayed on screen at one time. Pop-up windows might be a solution, but the design requires one to keep a piece of paper handy in order to keep track of everything.

The documentation suffers from the same problem. There is more information to be presented than is convenient and the manual ends up being more confusing than helpful. It is written as if it were the owner's manual for the Harmony control center, down to a warranty disclaimer from the head of R&D. What this offers in atmosphere, it sacrifices in clarity. It lacks a tutorial or fast-start section and one must read all the way to page 41 before finding either what the actual victory conditions are or what the basic strategy of the game might be.

In spite of the manual and interface, however, *Maelstrom* is well worth the effort to be expended in learning it. It seldom drags as the game progresses, and if it does, the player can crank up the clock until something happens. *Maelstrom* will take plenty of time and many games to win, providing much more than the average number of "Lost Evenings" without getting old. Best of all, there just aren't many games out there that are very similar to *Maelstrom* at all, so those who appreciate big games should take a ride. **CGW**

Confessions of SIN

Unlike the hints in the manual, which deal with specific events or items in the game, the following advice offers some ideas on the nuts and bolts of running a successful rebellion.

Mining

- Survey early, survey often, survey everywhere.
- Get as many mines into production as early as possible.
- Fitz prices are high, and you don't need the staff elsewhere

Research

- Have at least one team working on each research area as soon as you can get top people in each field
- If you sell a weapon, it will soon be shooting back at you.

Military

- Ships on the ground at Harmony offer NO protection from enemies. Put idle ships on a patrol mission. They can be recalled or redirected if trouble arises elsewhere.
- With a maximum of eight ships per mission, it may take two or more missions to the same planet at the same time in order to defeat very powerful enemies.
- Have several Fox class ships available for transporting SIN agents around.

SIN

- First Rule of Maelstrom: "Mr. Fredricks is your friend."
- Recon every planet as soon as possible.
- Don't blackmail people you want as a friend.
- Insurge the rich planets first, and only when a top-notch agent will get the mission.
- Last rule of Maelstrom: "Mr. Fredricks is your friend."

Transcontinental Competition

MPG-Net's *Empire Builder*

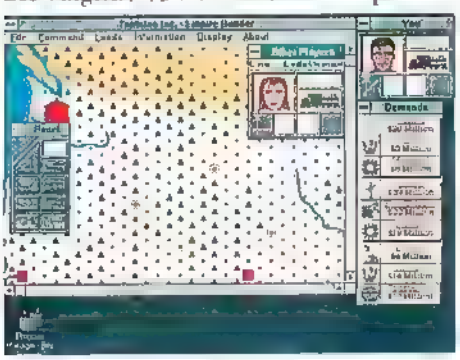
by Ken Hill

Train photo by Russell Sipe

For many years there has been a niche in the board game market for games involving trains and railroads. This genre has produced some classic games over the years: *Rail Baron, 1830, Railway Rivals* and many others. One of the most popular rail games released in recent memory is Mayfair Games' *Empire Builder (EB)*. Now, fans of *EB* can take their dreams of riding the rails to fame and fortune to the electronic network of the MPG-Net. With this excellent implementation of a classic board gaming system, the rail game fanatic can experience a game with other players around the world as easily as if they were all sitting around the same table.

Take A Load Off

Empire Builder is a game played on a map of the United States and southern Canada in a modern era. The object of the game is to make money faster than your competitors. The players do this by picking up loads from cities on the map and delivering these loads to other cities. Players have three demand cards (with three possible contracts per card) at all times which gives them nine possible combinations for earning the green stuff. For example, a demand card might indicate "Cars to Los Angeles, $34 Million" or "Imports to Winnipeg, $20 Million." The farther away from the source of the demand, the higher the card will pay upon successful delivery.

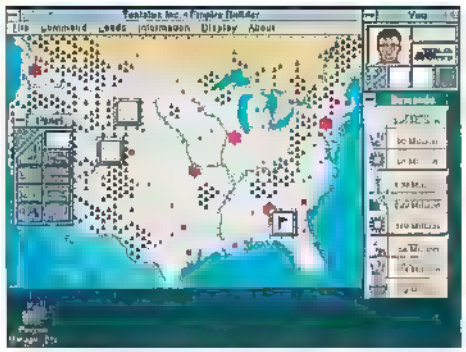


Players construct their rail network by connecting dots on a grid superimposed on the map. Starting from a major city like Chicago, New York or Seattle, they build track across the country which they can use to fill the needs of the demands listed on their cards. The price of track is determined by terrain; mountain mileposts and river crossings cost more than building in open country. Routes into cities are also expensive. Two preliminary rounds of track laying start the game, after which trains are placed on the map and a turn sequence of "move then build" is followed for the rest of the game.

There are six major cities on the map. Other cities on the map fall into two other categories, medium or small. Access is limited to these cites in order to provide some competitive flavor to the building process. Most cities provide commodities roughly corresponding to their "historical" economy. Detroit provides cars, Des Moines and St. Louis, corn, and the Pacific Northwest or Maine, wood.

Each turn, players move their trains around the map, picking up and delivering loads, and making money. Once a player successfully delivers a load, he or she draws another card from the "demands" pile and continues. Early in the game, most of the earnings are re-invested in track building to expand the network. Later on, players can upgrade to faster or more powerful locomotives to run on their mature lines.

Disasters like floods, snow storms or strikes appear from time to time to hamper the players. Getting caught in a derailment or similar disaster can be a minor annoyance or a major tragedy depending on the situation. The first player to amass $250 million in cash and has successfully connected to five of the six major cities on the map wins the game.



Net'n on the Rail Road

On MPG-Net, potential players gather in a conference area and wait for other players to appear. Once they are ready to play, one player starts a game by establishing two guidelines for the game: starting cash and victory conditions. The other players join the creator in his or her game group and the game begins.

Once the *Windows*-based front end is started by the host computer, players are presented with a beautiful representation of the game map in a window. Other windows soon pop up with additional information. Each player can see their current cash position, train level and loads they are carrying in a small window labeled "You." The player can also see the same information about the other players in the game (except for cash position). The "Demand" window shows the player's current demand cards, while a click of the

TITLE	Empire Builder
SYSTEM	IBM (Windows, modem required)
GRAPHICS	VGA
PRICE	$3/$4 per hou
DESIGNERS	Mayfair Games/Tantalus, Inc
SERVICE	MPG-Net (800) GET-GAME

To order: See your local retailer or call 1-800-477-3650

Circle Reader Service #46

mouse shows the demand cards of others. There is also a "Control Panel" window which has icons for all the major game functions.

The MPG-Net implementation of the game is true to the original down to the finest detail. The map window in which players will spend most of their time is roughly 1/6th the size of the entire map. The player can scroll the map using the scroll bars on the side of the window. One can toggle between the larger, more detailed play window and a smaller representation of the whole map. Unfortunately, this map shows only the position of the trains and not the track networks, and so is only useful as a reference.

The game has several features that make the game both easier and faster to play than the original. Even long-time *EB* players sometimes forget where loads can be obtained. This problem is easily solved by clicking with the mouse button on the demand card. Not only do all the possible pick-up points for the commodity become immediately marked with a box, but also the destination for that load. Clicking with the right button will display these helpful markers on the larger scale play window while clicking with the left will display them in the full-map window.

Most game functions can be accessed from the control panel. Train movement can be started with a click on the movement icon. After this, the player simply points at the next milepost along the route and the train moves along. Right-clicking on the movement icon causes the train to "auto-move." The player's locomotive will move as far as it can along the current route until it reaches a decision point or runs out of movement points. This feature speeds up play and eliminates some of the endless clicking necessary to move an engine.

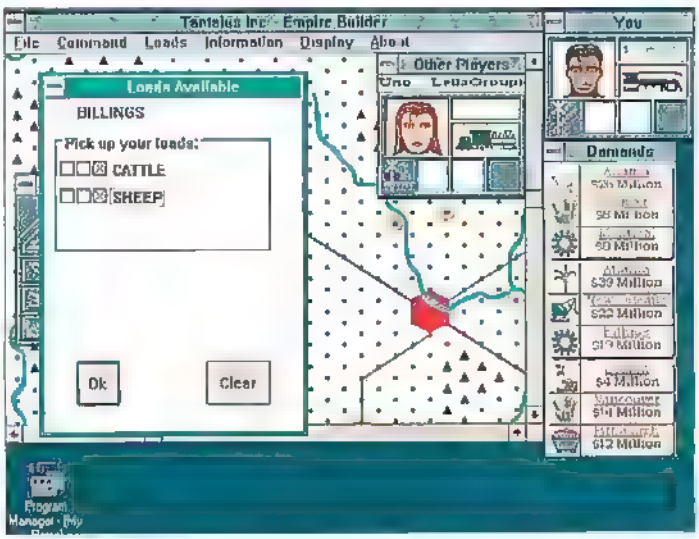
Building track is as simple as clicking on the build icon and using the "crayon" icon to draw track connecting from one milepost to another. Another time-saving feature is the "survey" option. This allows players to draw track on the map before their turn and build all of it quickly when the appropriate time arrives. Not only does this help with route planning and cash management, but it speeds the game up tremendously.

Players can also send public or private messages to other players during the game using the "Telegraph" icon. All of the important aspects of face-to-face play have been duplicated except for slipping that extra load on your train card while no one is looking!

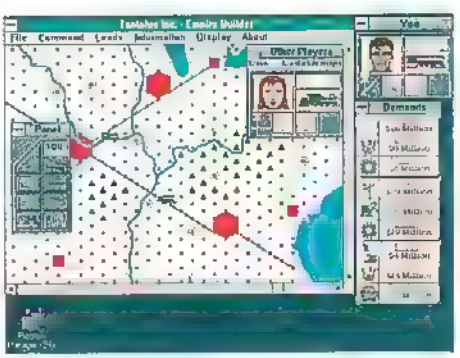
The Windows-based interface is a joy to use and makes excellent use of sound cues to let the players know when important events occur. The arrival of your turn is signaled by a hearty "All Aboard!" while news of disaster cards is preceded by a newsboy's call of "Extra! Extra!" Telegraph wires click, steam engines chug and diesels purr, all of which adds to the gaming experience.

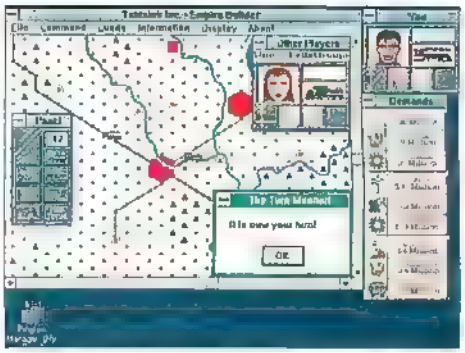
Rough Track

If the game has any drawback in its current form, it is the slowness of play. Despite all the efforts of the programmers to provide tools to speed play, the game can take a while. In my experience, a two-player game lasts around two hours. Each additional player in the game adds about a half to one hour to the length of the game. While these times mirror how long the game takes to play in person (at least with only three or four players), it is really longer than it has to be. After all, I don't have to count cash, physically draw track, or handle mundane bookkeeping chores in this version.



There can be long pauses while other players finish their turns. A careful player can use this time to survey track and plan strategy, but there are times when the game can drag. The times I quoted above assume that all the players in the game are experienced *EB* players who are familiar with the time-saving features of the interface. Games played with novices can be excruciatingly slow. (I encourage any beginner players to play a couple of games solitaire to get a feel for the game before attempting to play against experienced players.)



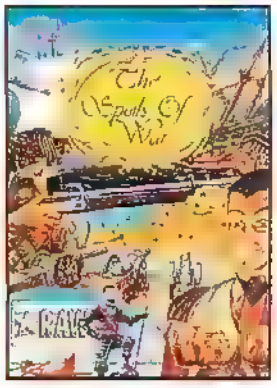


This really isn't the fault of the implementation but is more the nature of the game itself. There is a natural pause in the game, even when played in person, when a player draws a new demand card after delivering a load. Early in the game, players build track almost every turn which can slow the game as well. MPG-Net seems to have recognized this in their implementation and have taken steps to minimize the problem.

There are a number of minor problems with the system. The survey function at the time of this review only allows one section of track to be "pre-built." Many times, a number of spurs and connections must be built in a single round and this limitation slows play. Also, while the software is a Windows-based package, I would advise against trying to run any other application while the *Empire Builder* front-end is operating. A number of problems can arise, ranging from the changing of screen colors to a total crash of Windows, forcing the player out of the game. None of the game windows are re-sizable. It would be helpful if one could size the play window to a larger area if one is using one of the higher resolutions that Windows supports like 800x600 and 1024x768. In fairness to MPG-Net, I should point out that *EB* is very much a "work in progress" and many of the problems discussed are being ironed out. As the system matures, I'm sure that improvements will be made.

Minor problems aside, I was very impressed with the job that MPG-Net has done in converting one of my favorite board games to the small screen. Their implementation of the game is sure to pass the scrutiny of the fanatics who love games of this genre. It is simply the best computer implementation of a board game that I've played to date. The ability to play with other rail game fans across the country is icing on the cake. At a time when finding an opportunity to get the gang together for an evening of board gaming is getting more difficult, MPG-Net gives one the opportunity to play the game at anytime—without submitting the living room to the ravages of beer cans and pretzel bags. CGW

SPOILS OF WAR

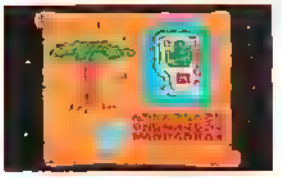


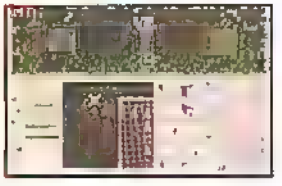
R.A.W. goes Direct for Recession Proof Pricing and AVAILABILITY!

Colonize and conquer far away lands. You will have to fight long and hard to achieve victory! Naval and Land battles, R and D, tactical option, colonists.
AT+ / 1 Meg RAM / EGA / VGA / Adlib / HD req'd. War / Management ~~$59.95~~
$34.95. Includes FREE Map Editor for Extended Gameplay!!

BUY FROM RAW ENTERTAINMENT
Satisfaction Guaranteed!

RAGNAROK





Join the final great Viking quest to aid the Gods in their final battle - Ragnarok!! 200 races, multiple quests with no predetermined storyline, 100's of items.
XT+ / 640K / VGA / Adlib / HD Required. Roleplaying
~~$50.95~~ *$34.95*

ACTION STATIONS!

The Naval Surface Combat Tactical Simulator. Covers 1922 - 1945. 30 scenarios, build and generate scenarios, 180+ ship classes, superb A1 and historical accuracy, 160 page manual.
XT+ / CGA / 640K / HD recommended.
Wargame ~~$49.95~~ *$29.95*

Guarantee:

*Return your purchase within 30 days of invoice date, with reason for return and with the product(s) in a resalable condition and we will refund your money INCLUDING the shipping and handling charge for that title! **

WE WANT YOU TO BE COMPLETELY SATISFIED!!

** Refunds only on titles purchased directly from RAW and with enclosure of original invoice.*

FIRETEAM 2200

Includes FREE Construction Kit (PC Only) !!
Available PC and Amiga (1 Meg)

Hi-tech combat on distant worlds! Command your Fireteam of up to 16 units. 30+ Combat Units, 25 Weapons Systems, Battle Computer, 20 scenarios, modem play between PC and Amiga versions.
XT+ / 640K / EGA / Adlib / Modem / HD required.
Wargame ~~$49.95~~ *$29.95*
Includes Free Construction Kit (PC Only) !!

Also Available:
(All 640K / EGA PC and 1 Meg Amiga.)

Worlds At War ~ Science Fiction, Wargame	~~$49.95~~	*$29.95*
Action Stations Scenario / Utility Disk(s)	~~£21.95~~	*$14.95*
(Amiga 1 Meg Only) Napoleon 1. Wargame	~~$49.95~~	*$29.95*
64 Page 8 1/2" x 11" Ragnarok Strategy Guide	~~$14.95~~	*$9.95*
Bravo Romeo Delta ~ Global Nuclear Wargame	~~$49.95~~	*$29.95*

Terms: Shipping and Handling $3.50 U.S. ($5 Canada) for first title, $1.50 ($2.00 Canada) for each additional title ordered at the same time. Goods sent Priority mail (Airmail Canada). Credit Card Sales: (MC / VISA). Call: 1 800 323 7878 (24 hours). Telephone Orders: Colorado residents add sales tax. Checks / Money Orders: State machine / disk size / format. Also daytime and / or evening phone number. Make check out to RAW Entertainment Inc. Mail Order orders: Texas residents add sales tax. Goods usually shipped within 3 business days

R.A.W. Entertainment Inc · 957 NASA Road One · Suite 146 · Houston · Texas · 77058 - 3098 (713) 286 2 386

© R.A.W. Entertainment, Inc. All Prices Relate to Advertised Titles Only

Viking Software, Inc.

Adventure/Role-Playing

Past

	IBM	Mac
AD&D Starter Kit	31	-
AD&D Collector's Edition	39	-
AD&D Collector's Edit. 2	43	
AD&D: Unlimited Advent.	37	5/93
Bard's Tale III	31	-
Bard's Tale Constr. Set	32	-
Betrayal at Krondor	10	
Black Crypt	32	
Castles	36	20
Northern Camp.	19	-
Castles II	37	30
Challenge of Five Realms	34	
Champions of Krynn	19	
Conquests of the Longbow	42	42
Curse of the Azure Bonds	15	37
Darklands	38	
Art Disk w/HB	13	-
Darklands MPE	30	-
Dark Queen of Krynn	31	37
Darkside of Xeen	42	
Dark Sun: Shattered Lands	4/93	11/93
Grey Isles Camp.	4/93	-
Daughter of Serpents	32	-
Death Knights of Krynn	19	
DragonLance Collec. Ed	43	-
Eric the Unready	37	-
Eye of the Beholder	19	-
Eye of the Beholder 2	37	
Eye of the Beholder 3	42	
Four Crystals of Trazere	34	-
Gateway Savage Frontier	31	-
Gemfire	32	
Gryphon Master of Havlar	11/93	
Heimdall	32	-
Inca	37	-
Inindo	37	
King's Quest IV	39	-
King's Quest V (VGA)	42	42
King's Quest VI	47	-
King's Ransom	37	
Legacy	34	-
Legacy of Necromancer	TBA	-
Legend of Kyrandia	37	-
Legends of Drakkhen	7/93	-
Legends of Valor	37	
Lord of the Rings	36	-
Lord of the Rings 2	36	-
Lost Vikings	10	
Lure of Temptress	37	
Magic Candle 2	37	-
Magic Candle 3	37	-
Martian Dreams	37	-
Might & Magic I & II	-	32
Might & Magic III	39	37
Might & Magic IV	42	-
M&M Clouds of Xeen	42	-
Merchant Colony	32	
Pirates Gold	6/93	-
Pool of Radiance	-	31
Pools of Darkness	37	37
Prophecy of the Shadow	38	
Quest for Glory I (VGA)	22	
Quest for Glory II	39	-
Quest for Glory III	42	
Ragnarok	35	
Realms	20	-
Realms of Arkania	37	-
Red Crystal	5/93	
Return to Zork	10	
Savage Empire	37	
Secret of Monkey Island	37	37
Secret of Monkey Island 2	39	37
Secret of the Silver Blades	15	37
Shadowgate		25
Shadowgate (Windows)	31	
Shadowlands	33	-
Shadow Sorcerer	34	-
Spellcraft	37	-
Spoils of War	37	
The Summoning	38	-
Tales of Magic	39	-
Treasures Savage Frontier	19	
Ultima IV	37	
Ultima V	37	-
Ultima VI	19	
Ultima VII	49	
Forge of Virtue	19	-
Ultima VII Part 2	49	
Ultima Trilogy I	37	
Ultima Trilogy 2	49	-
Ultima Underworld	49	-
Ultima Underworld 2	49	-
Uncharted Waters	43	43
Warriors of Legend	22	
Wizardry Trilogy	34	
Wizardry 4	27	-
Wizardry 5	17	-
Wizardry 6 (Bane)	39	37
Wizardry 7 (Crusaders)	42	30

Veil of Darkness

This gothic nightmare is not for the faint hearted. Plunge into a maze of vampires, werewolves and zombies accompanied with chilling graphics and sound F/X.

IBM $37

Present

	IBM	Mac
Alone in the Dark	3/93	
Amazon	38	
Batman Returns	42	
Blue Force, Next of Kin	Spring	-
Carmen SanDiego		37
Carmen SanDiego: Europe	34	
Carmen SanDiego: Time	34	
Carmen SanDiego: USA	34	
Carmen SanDiego: World	34	
Carmen SanDiego: Deluxe	49	
Carmen SanDiego: Amer. Past	38	
Castle of Dr. Brain	33	-
Champions	20	-
Classic Adv. Pak (LucasArts)	37	
Dagger of Amon Ra	42	42
Deja Vu I & II	31	25
Eco Quest 2	32	
Elvira 1	37	
Elvira 2	43	-
Freddy Pharkas	3/93	-
Heart of China	37	-
Indy Jones/Last Crusade	34	32
Indy Jones/Fate of Atlantis	39	37
Leisure Suit Larry Trilogy	53	-
Leisure Suit Larry 1	-	32
Leisure Suit Larry 5	42	42
Lost Files Sherlock Holmes	42	
Lost Treasures of Infocom	42	42
Lost Treasures of Infocom II	37	37
The Manhole	32	-
Maniac Mansion 2	Spring	
Out of this World	37	-
Police Quest 1	-	32
Police Quest 2	40	-
Police Quest 3	42	42
Rocketeer w/Sound Source	42	-
Savage Empire	39	-
Sea Rogue	28	-
Seal Team	37	

Legacy

You've just inherited a home from your evil ancestors. Explore over 400 rooms of terror in a desperate struggle to stay alive. Excellent graphics and sound F/X.

IBM $34

Realms of Arkania

Sir-Tech breaks off from the Wizardry line & brings another great role playing adventure. Utilizes excellent graphics and sound. Very hot item!

IBM $37

	IBM	Mac
Spellcasting 301	37	
Strike Commander	49	
Speech Pack	16	-
Unlimited (Windows)	31	-
Veil of Darkness	37	
Waxworks	39	
Willy Beamish	42	42
Wolfenstein/Spear Des.	42	

Future

ArmourGeddon	37	
Bad Blood	31	-
Battletech Powerhits	33	-
Buck Rogers	15	
Buck Rogers 2	19	
Breach 2	19	
Cyberspace	5/93	-
Dune	37	-
Dune II	37	-
Epic	42	-
Elite Plus	32	-
Flashback	5/93	-
Free D.C.	40	-
Gateway	38	-
Hard Nova	16	-
Jonny Crash	Fall	-
Leather Goddesses Phobos 2	46	
Legions of Krella/Star Legions	37	-
"M"	6/93	-
Mantis	38	-
Speech Pack	22	
Martian Memorandum	30	
Mechwarrior 2	40	
Megatraveller	15	
Megatraveller 2	39	
Nova 9	25	
Out of this World	37	37
Planet's Edge	22	-
Powerhits, Sci-Fi	32	-
Privateer	9/93	-
Protostar: War on Frontier	20	-
Rex Nebular MPE	38	-
Ringworld: Revenge Patri.	37	
Rise of the Dragon (VGA)	39	
Space Hulks	37	-
Space Quest I-II	-	32
Space Quest III	37	37
Space Quest IV	42	42
Space Quest V	42	-
Spelljammer	37	-
Star Control 2	37	-
StarFlight 1 & II	16 ea.	37 ea.
Star Trek 25th Anniversary	36	-
Star Trek: Next Generation	30	
Strike Commander	49	
Speech Pack	16	-
Terminator 2029	42	-
Twilight: 2000	32	-
Ultrabots	37	-

	IBM	Mac
Wing Commander I	19	
Secret Mission 1 & II	19 ea.	-
Wing Commander I Deluxe	49	-
Wing Commander II	49	
Special Operations 1	19	
Special Operations 2	19	
Speech Pack	13	
Wing Commander III	30	
X-Wing	42	-

Hint Books

A-Train, Official Strat. Guide	2
AD&D Clue Books	10-12
Avatar Adventures	11
Bard's Tale III	10
Chaos Strikes Back	10
Chuck Yeager Handbook	12
Civilization	12
Clouds of Xeen	15
Dagger of Amon Ra	0
Darklands	3
Dungeon Master	10
Dungeon Master Scrolls	12
Elvira I & II	8 ea.
Empire Deluxe Strat. Guide	12
Eye of the Beholder 2	12
F-15 Strike Eagle III Guide	12
Falcon Air Combat	12
Falcon 3 Strategic Guide	17
Global Conquest: Guide w/disk	15
Great War Planes	12
Gunship 2000 Strategy Guide	12
Jetfighter I: Strat. Guide	12
Legend of Kyrandia	20
Legends of Valor	10
Lemmings: w/companion disk	15
Lord of the Rings	10
Lost Files of Sherlock Holmes	10
Lucasfilm Air Combat	12
Lucas Arts Adv. Game Book	12
Harpoon Battlebook	12
Heaven & Earth: Strat. Guide	12
Magic Candle 2	10
Martian Dreams	10
Might & Magic Official Guide	12
Might & Magic III	15
Patriot: Official Strat. Guide	12
Planet's Edge	15
Pools of Darkness	12
Powermonger Official Strat.	12
Populous I & II Off. Strat. Book	12
Quest for Clues: Book of Orbs	11
Quest for Clues: Man. of Swords	11
Quest for Clues 3 & 4	16 ea.
Railroad Tycoon	12
Ragnarok Strat. Guide	10
Rex Nebular	10
Ringworld	8
Run 5 Magazine 1 - 7	5
Secret of Monkey Island I & II	10 ea.
Sherlock Holmes	11
Sierra Hint Books	8
Sim Earth: Official Strat. Guide	12
Sim Life: Official Strat. Guide	3
Star Control 2	11
Starflight I & II	8 ea.
Star Trek 25th Anniversary	10
Strike Commander Guide	10
Stunt Island Guide	12
Summoning	15
Ultima: Official Book	12
Ultima III-VI	9 ea.
Ultima VII	10
Ultima VII Part 2	10
Ultima VII & Underworld	11
Ultima Underworld I & II	10 ea.
V for Victory #1 Battle Book	12
Veil of Darkness	10
Wing Commander I & II Guide	12
Wizardry 6 (Bane)	10
Wizardry 7: Hint Book	13

X-Wing

Pilot X-wing, A-wing, or Y-wing against the Imperial Empire. Includes combat training, tours of duty, promotions, decorations, replay camera. Digitized music and dialogue from the movie. Must have!

IBM $42

Hardware

AdLib	49	
APS 2001 Cobra Joystick	52	-
CH-Flightstick	37	
CH-Virtual Pilot	66	-
Flight Yoke 2000	42	
Gravis Eliminator Gamecard	29	-
Gravis Joystick	39	
Gravis Pro	4	-
Gravis UltraSound	130	
Pilot Control Stand	21	-
Pro Audio Spectrum-16	210	
Pro Audio Spectrum Plus	145	
SoundBlaster ASP 16	235	-
SoundBlaster Pro	180	
SoundBlaster Pro Basic	150	-
SoundBlaster Microchannel	269	
Thunderboard	99	-
ThrustMaster flight stick	89	
ThrustMaster Pro	14	-
ThrustMaster Rudder Pedal	09	-
ThrustMaster Throttle	79	
ThrustMaster TSR's	12	

March Specials

	IBM	Ami
A.T.A.C.	29	-
A Line in the Sand	19	-
Champions of Krynn	19	-
Centurion	16	-
Death Knights of Krynn	19	-
Eye of the Beholder I	19	-
F-16 Combat Pilot	10	-
Int. Sports Challenge	-	19
Links/Bountiful Course Disk	-	5
MBT. Cen. Germany	-	19
Overrun	-	10
Secret of Monkey Island I	-	19
Sim City Add-ons 1 & 2	-	5
Space Quest IV	-	19
Starflight I & II	16 ea.	-
Stratego	-	15
Test Drive II: Supercars	-	5
Treasures of Savage Frontier	19	-
Ultima VI	19	-
Wing Commander I	19	-

Latest and Greatest

Battles of Destiny
Conquered Kingdoms
Dune II
F-15 III
Front Page Sports: Football
Mercenaries
Pacific War
Star Control II
Ultima Underworld II
V for Victory Series

For information and release dates 1-(404) 840-7906
To place orders in U.S. and Canada 1-(800) 852-6187
Fax 1-(404) 840-7925
2890 Lake Colony Drive, Suite 12, Norcross, GA 30071
Please have credit card ready! Open Saturdays 10-5 for your convenience.

SAME DAY SHIPPING on items in stock.
Hours: Mon-Fri 10am-10pm EST (6am 7pm PST).

UPS Rates:	Ground:	$5.00	3-day Air:	$6.00
	2-Day Air:	7.00	AK & HI:	12.50
	COD Add'	5.00	Overseas:	Avail.
Mail Rates:	AK & HI.	6.00	Canada:	6.00
	Overseas:	Avail.		

Prices are subject to change so please call first!
PHONE: (404) 840-7906
24 HR. FAX: (404) 840-7925

Strategy

Pre-WWII

	IBM	Mac
Ambush	4/93	-
Ancient Art of War Skies	37	-
Blue and the Grey	5/93	-
Caesar	37	
Centurion	18	-
Civil War Vol. 1 2 or 3	37	32
Cohort 2	18	-
Conquered Kingdoms	37	-
Conquest of Japan	37	
Discovery of Columbus	37	
Genghis Khan	37	-
Gettysburg	39	-
Gold of the Americas	26	29
L'Empereur	38	
Liberty or Death	37	-
Merchant Colony	32	-
No Greater Glory	22	-
Nobunaga's Ambition 2	39	
Paladin II	37	
Prelude to Jutland	26	-
PTO	3/93	-
Rampart	25	
Red Baron (VGA)	42	42
Mission Builder	19	-
Romance of 3 Kingdoms	42	-
Romance of 3 Kingdoms 2	42	-
Siege	38	
Dogs of War	19	
Warlords/Enhanced	19	-
Warlords II	6/93	-
Waterloo	19	

World War II

Aces of the Pacific	47	
WWII, 1946'	25	
RAF in the Pacific	10	
Aces Over Europe	10	
Campaign Disk 1	20	-
Action North Atlantic	26	
Action Stations v3.2	32	
Data Disk	19	-
Air Raid Pearl Harbor	26	-
Air Warrior	37	
B-17 Flying Fortress	38	
Bantai	26	-
Battletank Barbarossa	39	-
Bismarck	26	
Campaign	37	
Carriers at War	42	35
Const. Kit	37	30
Carrier Strike	42	-
Expansion Disk #1	21	-
Clash of Steel	4/93?	
Fleet Commander	6/93	-
Fleet Med	39	-
German Raiders Atlantic	26	-
Grand Fleet	39	
Great Naval Battles	42	
Super Ships/Atlantic	19	-
Scenario Builder	25	-
Americas/Atlantic	19	
High Command	44	-
High Cmd Enhan. SVGA	5/93	-
In Harm's Way	39	-
Malta Storm	39	-
Marianas Turkey Shoot	26	-
MBT Central Germany	39	-
MBT Kursk	39	-
Midway	26	-
New World Order	2/93	-
Pacific Theater Op.	5/93	
Pacific War	47	
Panzer Battles	26	29
Patton Strikes Back	17	19
Reach for the Skies	18	-
River Plate	26	-
Rommel North Africa	26	29
Second Front	22	
Secret Weapons Luftwaffe	44	-
DO-335 plane disk	20	-
HE 162	20	
P-38	20	
P-80	20	-
Seventh Fleet	39	-
Silent Service 2	34	-
Silent Service 2 Classic	22	-
Task Force 1942	39	-
Their Finest Hour/Battle Brit.	44	
Third Reich	28	
V for Victory: Utah Beach	43	37
V for Victory: Velikiye Luki	43	43

Empire Deluxe

This is the modern version of the award-winning EMPIRE. Now with Super VGA, digitized sound F/X, network & modem capability, scenario editor, and more. A must!

IBM $37

	IBM	Mac
V for Victory: Mkt. Garden	43	43
V for Victory: Cassering Pass	2Q	2Q
V for Victory: Stalingrad	3Q	3Q
Victory at Sea	1993	
Warlords	-	37
Western Front	22	-
WW II: Battles of Pacific	5/93	-

Modern

7th Fleet	39	-
A.T.P.	39	
A-10 Warthog	12/93	
A Line in the Sand	19	-
ATAC	29	-
Air Force Commander	37	-
Allied Forces	29	
Commanche: Max. Overkill	43	-
Expansion Disk 1	25	-
Expansion Disk 2	25	-
Conflict: Korea	19	
Conflict: Middle East	19	-
Crisis in the Kremlin	42	-
F-117A Nighthawk (VGA)	40	-
F-15 II Classic	22	-
F-15 III	42	-
F-15 III Voice Commander	18	-
F-19 Voice Commander	18	-
Falcon 3.0	45	
Operation: Fighting Tiger	25	-
Falcon MC	-	42
Flight Sim 4.0	40	-
Flight Planner	27	
Sound & Graphics	27	
Rescue 911	19	
Scenery Design	28	
Global Effect	34	-
Gunship 2000	38	-
Campaign Disk 1	22	
Halls of Montezuma	27	29
Harpoon v. 3	25	37
Battleset 2 or 3	20	20
Battleset 4	22	24
Harpoon Designer Series	32	32
Harpoon Scenario Editor	25	25
Harpoon Challenger Pak S.E.	49	49
Harpoon II	1993	-
Harrier Assault	37	-
Jet Fighter 2	42	-
Add on disk	18	
JF2 w/add on disk	47	
Jump Jet	34	-
Jump Jet "Ace Pack"	38	-
KGB	22	-
M1 Tank Platoon	29	-
MacArthur's War	32	
Megafortress	28	
Mission Disk 1 or 2	24	
Megafortress Megapack	37	-
Pacific Islands II	32	-
Patriot	43	-

	IBM	Mac
Red Storm Rising Classic	22	-
Shadow President	42	-
Shuttle	38	-
Special Forces	32	-
Utopia	32	-

Sci-Fi

Battlefield 2000	37	
Breach 2	19	-
Cyber Empires	31	
Futuremm 2200	34	
Global Effect	31	
Imperium	25	-
Mantis	41	-
Speech Pack	18	
Mechamander	10/93	
Mercenaries	37	-
Mercenaries 2	6/93	-
Reach for the Stars	28	28
Robosport (Windows)	38	37
Rules of Engagement	39	-
Rules of Engagement 2	4/93	-
Second Conflict (Windows)	34	
Space Inc.	6/93	
Spaceward HO! (Windows)	37	
Spaceward HO! (DOS)	37	-
Spectre	37	-
Star Legions	37	-
Star Legions 2	8/93	-
Theatre of War SVGA	3.	-
When Two Worlds War	37	

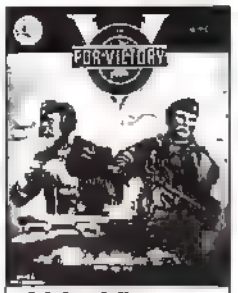
General

A-Train	42	42
Construction Set	24	24
Air Bucks	37	
Are We There Yet?	16	-
Battles of Destiny	37	-
Battle Chess	22	32
Battle Chess (Windows)	32	-
BattleChess 4000 (VGA)	32	-
BattleChess 4000 (SVGA)	37	-
Buzz Aldrin's Race to Space	42	-
Caesar's Palace		18
Caesar's Palace (Windows)	18	
Chessmaster 3000	34	-
Chessmaster 3000 (Windows)	43	-
Civilization	38	38
Civilization Master Edition	45	42
Classic 5	1Q	3Q
Classic 5 (Windows)	2Q	-
Club Racquetball	-	18
Command HQ Classic	22	
Design Your Train	49	-

Carriers at War Construction Kit

This kit allows modification of existing CAW scenarios or the creation of new scenarios. New scenarios include Wake Island, Guadalcanal, and Tarawa.

IBM/Mac $37



V for Victory: Market Garden

The most popular WWII series in gaming software adds another proud product. Simulates Allied airborne invasion of Germany in 1944. SVGA graphics required.

IBM/Mac $43

	IBM	Mac
Design Your R.R.	38	-
Design Your Landscape	57	-
Dominant Species	32	-
Dominion	9/93	
Eco Quest 2	32	-
El-Fish	37	-
Empire Deluxe	37	-
Eric The Unready	37	-
Faceiris III	17	17
Flight Sim 4.0	40	39
Sound and Graphics	27	-
Global Conquest	39	-
Gobliiins	37	-
Grandest Admiral	8/93	-
Grand Slam Bridge II	34	
Heaven and Earth	32	
Hong Kong Mahjong	33	-
Hong Kong Mahjong Pro	31	-
Hoyles/Classic	32	-
Incredible Machine	32	
ishido	-	34
Lemmings	32	32
More Lemmings & Game	33	-
More Lemmings	22	-
Lemmings 2	37	37
Lexi-Cross	27	32
Life & Death II	32	-
Lost Admiral	38	1993
Lost Admiral Enhanced	12/93	-
Monopoly	28	
Monopoly Deluxe DOS/Win	37	-
Origin F/X Screen Saver	25	-
Perfect General	38	
WWII Scenario Disk	22	-
Great Battles 20th Cen	25	-
Perfect General Enhanced	8/93	-
Pinball: Windows	32	-
Pool Shark	18	-
Populous	16	-
Populous 2	37	-
World Editor	3/93	
Powermonger	31	-
WWI Scenario Disk	3/93	-
Power Politics	32	
PowerHits: Movies	32	
R.R. Tycoon Classic	22	
Reach for the Skies	22	-
Risk	26	-
Risk (Windows)	32	
Sargon V	32	32
Scrabble Deluxe (Windows)	32	-
Shard Of Bridge	32	2Q
Shard Of Bridge (Windows)	32	
Shuttle	38	-
SimAnt	38	38
SimCity	32	-
SimCity (Windows)	38	-
SimCity Supreme	-	37
SimCity Supreme II	-	47
SimCity 2000	3Q	
SimEarth	42	42
SimEarth (Windows)	42	-
SimFarm	3Q	-

	IBM	Mac
SimLife	42	42
SimLife (Windows)	47	-
Solitaire (Windows)	32	
Solitaires Journey	38	
Spoils of War	37	-
Stunt Island	37	-
Super Tetris	32	32
Super Tetris (Windows)	32	
Tristan	32	37
Utopia	32	-
Virtual Reality Studio 2	57	-
Wacky Funsters	18	
Ween: The Prophecy	37	
Wordtris	29	32

Sports

4-D Boxing	16	31
All-Amer. College Ftbll 92	37	-
Andretti's Racing Challenge	16	-
ATP Tennis	31	
Bill Elliot: Nascar	32	32
Car and Driver	37	-

Warlords Enhanced

This classic wargame has been on top of CGW's Reader Poll for 2 years. Addictive medieval strategy game with 1-8 human/computer players. A+ rating.

IBM $19

	IBM	Mac
Complete PGA Tour Golf	37	-
Earl Weaver Baseball	-	31
Earl Weaver Baseball II	6	-
Front Pg. Sports: Football	42	-
Front Pg. Sports: Baseball	3/93	-
Front Pg. Sports: Bskthall	'93	
Games: Summer Challenge	35	
Games: Winter Challenge	35	-
Grand Prix	37	22
Grand Slam Bridge II	32	
Hardball 3	37	
MLBPA Player Disk	15	-
Stadium Disk	18	-
Hockey League Sim II	29	
Indy 500	16	
Jack Nicklaus Sig. Ed. Golf	42	-
Course Disk #2	15	-
John Madden Football II	31	
Jordan - Flight	37	-
Links	39	-
Links 386 Pro	42	-
Mauna Kea Crse. Disk	19	
MicroLeague Baseball 4	33	
NCAA College Football '92	37	-
NFL Challenge	56	-
NFL Video Pro Football	47	-
PGA Tour Golf	19	37
PGA Tourn. Crse. Disk	15	15
PGA Tour Golf (Windows)	37	-
PGA Tourn. Crse. Disk	15	
Pool Shark	22	
Pro League Baseball	37	
PowerHits: Sports	32	
Tony LaRussa ult. Baseball	19	-
Add-On Disks	(Sea	
Tony LaRussa 2	37	-
'92 Stats Disk	22	
AL/NL Stadiums	18	
Fantasy Disk	22	-
Wayne Gretzky Hockey 2	36	-
Hockey League Sim.	28	
Wayne Gretzky Hockey 3	37	
Wilson Pro Golf	27	-
World Circuit	34	-

Keyboard Overlays

A-10 Tank Killer	10
ATP	10
Aces of the Pacific	10
B-17 Flying Fortress	10
C. Yeager Air Combat	10
F-15 Strike Eagle II	10
F-19 Stealth Fighter	10
Falcon 3.0/3.0 1	10
Flight Simulator 4.0	10
Jetfighter I and II	10
Megafortress	10
Secret Weapons Luftwaffe	10

CD-ROM

	I	M
12 Roads to Gettysburg	42	42
The 7th Guest	57	-
Amazing Universe	47	47
Battle Chess	47	47
Battle Chess Enhanced	47	47
Blade	-	57
Buzz Aldrin's Race Space	57	-
Campaign	37	
Case of Cautious Condor	37	
Challenge of Five Realms	2/93	
Chessmaster 3000	57	-
Conquest of the Longbow	42	
Creepy Castle	-	32
Cyberspace	5/93	-
Dagger of Amon Ra	42	-
Dark Sun	9/93	-
Destination-Mars	37	-
Dune	42	-
Eco Quest	42	-
Great Naval Battles	7/93	-
Gunship/Midwinter	57	-
Guy Spy	32	-
Iron Helix	-	62
Jones in the Fast Lane	42	-
King's Ransom	37	-
King's Quest V	42	-
The Legend of Kyrandia	42	
Loom	47	-
Lost Treasures Infocom I	47	47
Lost Treasures Infocom II	37	37
M-1 Tank Platoon	57	-

	I	M
Magnetic Scrolls	47	
Manhac Mansion 2	3/93	-
Mantis	42	-
Manhole Enhanced	37	-
Murder Makes Strange Deadfellows	37	-
North American Indians	42	
Pacific Islands	32	
Pacific Islands II	32	
Prince of Persia	37	-
The Secret of Monkey Island	47	-
Secret Weapons of Luftwaffe	57	-
Sharif on Bridge	47	-
Sherlock Holmes Cons. Det. I	43	43
Sherlock Holmes Cons. Det. II	43	43
Shuttle	57	-
Spaceship Warlock	-	55
Space Quest IV	42	
Star Trek 25th Anniv. Edition	47	-
Total Baseball	42	-
Total Distortion	-	62
Ultima I-VI Bundle	57	-
Ultima Undwld/Wing Co. II	47	-
Victor and Vondo	-	37
Where World Carmen Deluxe	52	-
Willy Beamish	42	-
Wing Commander + Secret Missions 1 & 2	47	-
Wing Commander II Deluxe	47	-
Wing Commander/Ultima VI	57	-
Wolfpack	3/93	-

MS-DOS Goes to Washington

D.C. True's Shadow President

by Chuck Moss

D.C. True's new strategy game, *Shadow President*, is an extremely detailed geo-political simulator that balances the world on its players' shoulders. It also allows players to kick said globe around like a beach-ball, but that's definitely *not* advised. There are five alternate reality scenarios, all starting in January 1990, ranging from genuine Earth to Super-Iraq (guess who won the Gulf War?). The game runs in continuous time, with days varying from half a minute to several seconds.

Requiring a fairly sophisticated computer set-up, *Shadow* takes up 7.5 megabytes of hard disk space, a minimum of 550K free memory, a good sound card/speaker set up, and advises using a math co-processor and 486 chip. However, I ran it on a beat-up 286 and it worked fine. VGA graphics are crisp and up to current standards. It does occasionally lock up, particularly in some of the military sub-menus, but this might be due to my pushing the capacity of an older machine. Caveat: save often.

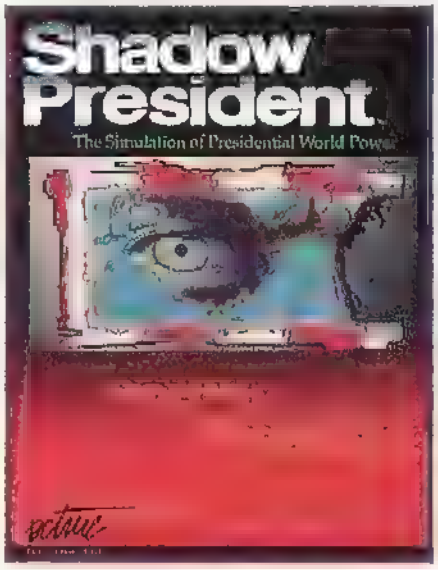
The players of *Shadow President* find themselves transported into the Oval Office. There is no election. One just steps into the seat of power and starts to act. This is accomplished not only through the player's computer, but through the "Shadow Network" as well. The latter is the instrument that allows one to control the destiny of the United States and the world. The Shadow Network, or the on-screen display, is a world map with a series of buttons set below and to the side. Using the mouse, the player points and clicks to various countries, interacting with them much as in Chris Crawford's *Balance of Power*.

A good President is an informed President, and this is where *Shadow* provides bells and whistles. Players can access country-by-country data from the "CIA World Fact Book" that comes as part of the software, accounting for much of those 7.5 MBs. A series of "filters," or push buttons, change the map to display economic strength, alliance orientation, military spending, strategic value, etc.

In addition, the player has a stable of advisors: Secretary of State, Defense Secretary, CIA Director, etc. These advisors will put in their two cents on proposed policies, and will even resign if you do naughty things. (The Press Secretary is an attractive blonde. My wife dubbed her square the "Packwood Button.")

Power? You want it, you got it! Presidential authority is exercised through a series of menus and buttons. The Shadow Prexy can dole out foreign aid, rearrange the Federal Budget, and raise/lower taxes at whim. The budget menu allows across-the board spending cuts the likes of which Ronald Reagan would have drooled for.

In addition, the player may act as statesman and propose trade relationships, try to influence other countries' policies, attempt to bring about peace, or wage covert war. Finally, there's the dreaded "War Room" in which military affairs are handled in highly abstract fashion. Troops are committed to countries or launched on invasions as easily as setting a number, and combat results are displayed instantly. This is also where a player can conduct—gasp!—nuclear war!



TITLE	Shadow President
SYSTEM	IBM
GRAPHICS	VGA
PRICE	$69.95
PROTECTION	Documentation Look-up
DESIGNERS	Brad Stock, Robin Antonick, Charlie Athanas
PUBLISHER	D.C. True, Ltd. 1840 Oak Avenue Evanston, IL 60201 (800) 929-1243

Join The Network, Seize The World

Shadow President gives the player a varied and sophisticated array of tools to monkey with the planet. The player defines the goals and the means. Whadda ya wanna do? Nuke Ohio State? Keep things running on an even keel? Raise the world's standard of living? Balance the budget? You've got the means, the ends are your business.

But this is not *Risk*. Conquering geographical areas until one covers the globe like the symbol for Sherwin Williams Paint Company is not going to provide victory. A player is measured by several scorecards. Most immediately important is Leadership Effectiveness Rating (LER). A low LER means that everybody laughs at you and kicks sand in your face. Every time a player does something that doesn't work out, LER drops. Guard that LER well, or you'll find even Chad won't exchange cultural programs.

A second important factor is "Ruthlessness." Do too many nasty things and you'll find yourself assassinated. Third, your popularity with the U.S. electorate is key. Remember: he who has a 90% approval rating in summer 1991 can be out of office in January 1993. More importantly, let popularity drop too far and the game will be abruptly terminated with an impeachment notice.

Playing Chicken On The Hot Line

So how does the game play? With a fairly long learning curve. There are lots of subtle by-plays among the nations, lots of hidden actions going on. Everybody knows what's coming on August 2, 1990, of course, and Saddam can be easily thwarted. But he'll be back, and there are other pitfalls out there. As President, the player makes the international climate, and the more ruthless your policies, the more chaotic and violent the world be-

Brian Vodnik's Vikings™ Fields of Conquest™

The BEST Multi-Player Medieval Strategy Game made. PERIOD.

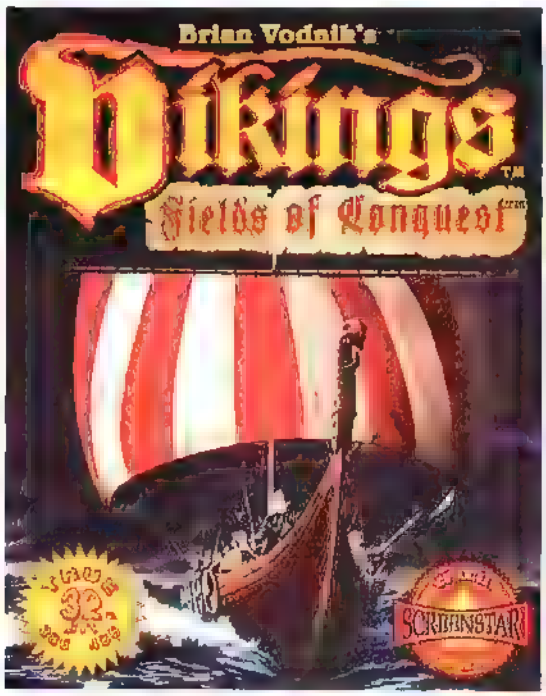
"... Quality strategy war game that is well worth looting and pillaging to get."
Computer Gaming World, July '92

"... an excellent strategy game that should appeal to strategists of all levels of experience."
Amazing Computing, Nov. '92

"... REAL WINNER! Superior graphics and superb gameplay."
Chicago Tribune, Sept. 25, '92

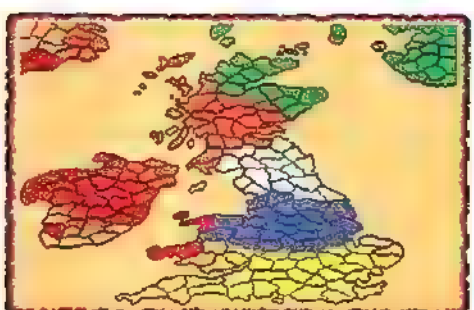
"... Unlike so many of the lackluster wargames out there Vikings™ has a difference—it's actually good."
Computer Trade Watch, June 22, '92

"... The intuitive control system is so straightforward that you can get hooked immediately ... addictive and highly enjoyable."
CU Amiga

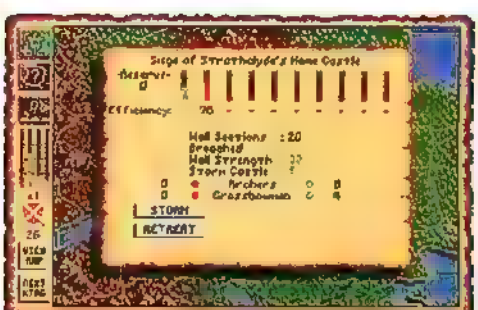


- 1–6 Players, 199 Territories
- 7 Troop types and catapults
- 5 Castle types, 5 Difficulty levels
- Toggle each kingdom between human, computer, and off
- Resource management of food, wood, stone, iron
- Beautifully HAND-DRAWN graphics
- Huge 800 X 896 pixel map that you actually play on!
- Simple point and click interface to an intricate and detailed game
- Handicapping

All the details of a territory can be found with a single click of the mouse.



Looking at the overview map, we see an even game in progress.



Sieging a home castle with only two catapults ... NOT a good idea!

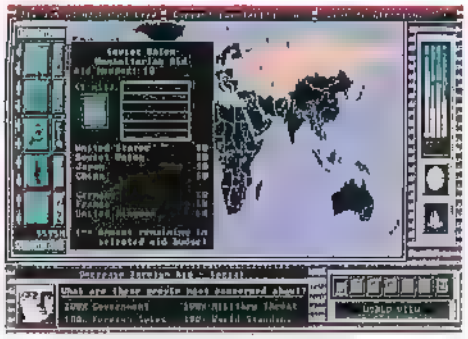
Realism Entertainment™

Available NOW for Amiga and IBM.
Coming soon for Color Macintosh.

Realism Entertainment™
6N522 Pine Street
Bensenville, IL 60106
(708) 595-7487
Circle Reader Service #85

VIKINGS™, Fields of Conquest™ and TRUE 32-BIT™, are Trademarks of Realism Entertainment™

© 1993 Realism Entertainment™
All Rights Reserved Worldwide.



comes. Conversely, be an international nice guy and the world smiles with you. Mostly.

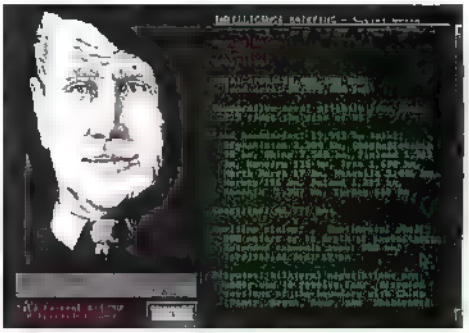
As a learning tool, *Shadow* does a good job of providing information and showing players how complicated the world is. As a simulation, it has certain real-world problems. A simulation, particularly one that draws heavily from contemporary headlines, must parallel the real world. This reviewer found certain...well, anomalies.

Most jarringly, American armed forces are paper tigers. Saddam's army kicks U.S. tail whenever armed force is applied. A typical counter to Iraqi invasion of Saudi Arabia put a million and a quarter U.S. troops against 800,000 Iraqi soldiers. The resulting clash took months, and U.S. casualty figures mounted to the 50,000 range. This sure isn't the Desert Storm I remember. In addition, committing troops causes one's popularity to free fall indefinitely. Once again, this isn't borne up by any real-world situation. Even Vietnam took three years for the public to cool, with Nixon reelected in 1972. Who programmed this thing? Cyrus Vance?

More inaccuracies: the USSR is belligerent and uncooperative. In 1990? Actually, Gorbachev was so desperate to save his regime, he was signing anything in exchange for cash. (Remember the Grand Bargain?) In short, as in many political games, the model reflects the designers' sensibilities rather than actual realities.

How does *Shadow* work as a game? The problem is that you can't do cool stuff. Effectively running a nation is a tedious business of details. A good world leader prevents bad things from happening and works to raise boring things like Third World GNP. Alas, an entertaining game must let the player be an activist, making things happen, bad or good. The simulation aspect of Shadow President forces one to be more passive than active if stability is the desired goal.

Shadow President, despite its wealth of detail, confines a player's actions to running through menus and inputting numbers, finely calibrating economics and relationships. It's highly ethical and educational, but boring. A player yearns to break loose and do something wild like invade Canada to bring home the Stanley Cup. Or drop a nuke on Tokyo just for the hell of it. Unfortunately, such actions cause the world to "tilt" faster than a pinball game in a Chicago bowling alley. Fortunately, such actions are possible, since rebooting a game is infinitely easier than rebooting the world.



Games that stress responsible management, yet stay fun, emphasize hands-on challenges: like *Sim City*, *Civilization*, or *Railroad Tycoon*. Large scale, highly abstract political simulations like *Crisis In the Kremlin* and *Shadow President* have many virtues but tend to be too arid for real entertainment. This one is predominantly for those who love to input numbers and tweak complex systems models. As for me, even invading Canada is more fun than carefully massaging the numbers in this educational, but less entertaining game. The reluctant verdict on *Shadow President*: a work of art that belongs in every civics classroom, but it sure won't drag me away from *Dune II*.

CGW

STICK IT TO YOUR NOTEBOOK.

Portable computers are great - except when it comes to playing simulation and action games. That's because they don't come equipped with a gameport. The Parallel Game Port™ (PGP) fixes that problem and lets you connect a joystick, yoke, weapon systems controller or pedals to any portable or desktop MS-DOS® computer.

And even if your computer already has a game port, the PGP's software features make it an indispensable accessory for any serious gamer. Use it to customize key joystick switches and eliminate inconsistencies between games. Even eliminate the computer speed dependencies of some game ports. PGP's Standard mode is fully compatible with all game software. And an Enhanced mode adds sensitivity and response for most simulation games.

Look for the Parallel Game Port in the software section of your computer store. Or call (714) 833-3355 and say: "Stick it to me!"

GENOVATION INC

Circle Reader Service #60

Top Titles at the Lowest Prices!

800-554-9925
Call Us On Our US/Canadian Toll Free Number!

Since 1982
CompuAbility
Consumer Electronics

FAX: (414) 357-7814
TECH INFO: (414) 357-8181
HRS (CST) M-F 8am-8pm, Sat 11am-5pm
P.O. Box 17882, Milwaukee, Wisconsin 53217

CGW 7-93

SOUND CARDS

CREATIVE
CREATIVE LABS INC

SOUND BLASTER 16 ASP $225

- 16-Bit Stereo Sampling & Playback for Voice Channel
- Enhanced 4-Operator, 20-Voice Stereo FM Music Synthesizer
- MIDI & CD-ROM Interfaces
- Windows 3.1, SB & SB Pro Compatible

MEDIA VISION

PRO AUDIO SPECTRUM 16 $175

MPC Multimedia PC

NEW! **Pro Audio Studio 16** $225

MODEMS

ZOOM

V.32 bis Send/Receive for Windows
Internal / External ..... $175/$205
V.32 bis Send/Receive 14,400
Internal / External $175 / $205

Supra Corporation

Supra Fax Modem V.32 bis Internal
with Fax Software DOS/Windows $179 / $179
SupraFaxModem V.32 bis, External
with Fax Software, DOS/Win $239 / $239

JOYSTICKS

Advanced Gravis:

Analog Joystick	$32
Eliminator Game Card	$30
PC MouseStick	$75

CH Products:

Virtual Pilot / Virtual Pilot Pro	$69 / $89
Flight Stick	$39
Hi Speed Adaptor	$19
Gamecard 3-Auto / Gamecard 3-PS/2	$30 / $49
MACH 3 Joystick	$29

Maxximum

MAXX Flight Yoke	$65
MAXX Pedal	$39

Kraft:

Kraft KC3	$17
Kraft Trackball w/Foot Controler	$55
Kraft Thunderstick	$27

Thrustmaster:

Flight Control	$75
Weapons Control Mark II	$99
Rudder Pedals	$119
Thrustmaster Pro	$119

IBM

Aces of the Pacific	39.95
WWII 1946 add on disk	19.95
Aces Over Europe	43.95
AD&D Dark Sun: Shattered Lands	47.95
AD&D Unlimited Adventures	31.95
ADIDAS/NBA JUNIOR VOL 1	34.95
Adventures of Pinocchio	45.95
Air Bucks	34.95
Air Traffic Controller	34.95
Air Warrior	39.95
Aircraft & Adventure Factory	34.95
Airforce Flight Assignment	39.95
Aladdin and His Wonderful Lamp	35.95
Alone in the Dark	34.95
Amazon	39.95
Ambush	37.95
Armored Fist	37.95
Ashes of Empire	44.95
Aspects of Valor	69.95
ATP Tennis	31.95
AT Air Command	34.95
B-17 Flying Fortress	39.95
Bad Blood	31.95
Barron's Book Notes	44.95
Batman Returns	39.95
Battles of Destiny	34.95
BattleChess 4000/Super VGA	29.95/34.95
Battlehawks 1000	37.95
Betrayal at Krondor	39.95
Big League ballpark disk/Baseball III	17.95
Black Crypt	31.95
Body Illustrated	44.95
Buzz Aldrin's Race into Space	39.95
Campaign	34.95
Car & Driver	37.95
Carrier Strike: South Pacific Expansion Set	19.95
Carriers of War	34.95
Carriers of War Construction Kit	34.95
Castles I or II	34.95/34.95
Caesar	34.95
Caesars Palace	19.95
Challenge of the Five Realms	34.95
Champions	34.95
Chess Master 5 Silver and 3	
Civilization	44.95
Classic Adventures	34.95
Commander Maximum Overkill	42.95
Mission Disk #1 or #2	23.95/23.95
Conquered Kingdoms	31.95
Conquest of Japan	34.95
Contraption Zack	24.95
Creepers	29.95
Crosswords Deluxe	21.95
Crusaders of the Dark Savant	41.95
Curse of Amon Ra	39.95
Curse of Enchantia	49.95
Cyber Empires	31.95
Daemonsgate VGA	34.95
Dagger of Amonra	30.95
Dark Queen of Krynn	31.95
Darklands	39.95
Darklands MPE	44.95
Dark Half	34.95
Dark Sun	47.95
Daughter of Serpents	37.95
Deja Vu I or II, Windows	31.95
Dominium Species	29.95
Dragon's Lair 3	34.95
Dr. Floyd's Desktop Toys	24.95
Dune II	34.95
Eagle Eye Mysteries	31.95
Ecoquest II	29.95
Ecoquest: The Search for Cetus	49.95
Eagle Eye: Deluxe	30.95
Eagle Eye: Interactive Adventure	31.95
Elvira Deluxe	34.95
Entrepreneur Business Planner	49.95
Evy the Unready	34.95
Exodus	24.95
F-15 #2 Classic premium	19.95
F-15 Strike Eagle III	34.95/49.95
Fables & Fiends: Legend of Kyrandia	34.95
Falcon 3.0	44.95
Disk 1: Operation Fighting Tiger	24.95
Final Conflict	29.95
Financial Workshop	26.95
Flashback	31.95
Flight Assignment: Air Force	39.95
Flight Simulator 4.0	39.95
Pilot's Power Tools	24.95
Freddy Pharkas	39.95
Front Page Football	39.95
Gambit	37.95
Gary Grigsby's Pacific War	44.95
Global Effect	37.95
Gobliins	24.95
Grand Slam Bridge	31.95
Great Naval Battles	42.95
Scenario Disk #1	26.95
Expansion Disk #2	20.95
America in the Atlantic	14.95
Hand Ball 9 or 11	29.95/31.95
Harpoon Signature Edition	47.95
Harvest Assault	34.95
Heaven & Earth	29.95
Heroes of the 357th	17.95
High Command	42.95
Hockey League Simulator II	29.95
Humans	24.95
INCA	34.95
Incredible Machine	29.95
Indy Jones 4: Fate of Atlantis	34.95
Italian 5.0	55.95
J. Nicklaus Sign Tour 2	17.95
Jack and the Beanstalk	35.95
Jump Jet	39.95
Jump Jet Ace Pack	49.95
Jutland	39.95
King's Quest 5 Enhanced	39.95
King's Quest 6	44.95
Lands of Lore	34.95
La Russa Baseball II	37.95
Ace Squad	24.95
Legacy, The	39.95
Legacy Realm of Terror	34.95
Legends of Valour	37.95
Lemmings	39.95
Oh No! More Lemmings (add-on)	21.95
Lemmings	34.95
Liberty or Death	34.95
Links 386 Pro	39.95
Mauna Kea	19.95
Bunt Springs	19.95
Lord of the Rings II: Two Towers	34.95
Lost Files of Sherlock Holmes	42.95
Lost Treasures of Infocom	39.95
Lost Vikings	29.95
Lunar Command	34.95
Lure of the Temptress	29.95
Magic Candle III	37.95
Mantis / Speech Pack	29.95/19.95
Manic Mansion	34.95
Mega Lo Mania	28.95
Might & Magic II or III	34.95/39.95
Michael Jordan in Flight	37.95
Might & Magic III	34.95
Monopoly Deluxe for Win	34.95
Morris's Magical Music Machine	20.95
MS Golf for Windows	42.95
Multimedia Music Weekly	35.95
Mystery at the Museum	34.95
Nam 1965-1975	29.95
National Lampoon's Chess Maniac	39.95
News of the Past	34.95
NFL Pro League Football	44.95
NFL Video Pro Football	44.95
No Greater Glory	39.95
Omar Sharif on Bridge/Windows	29.95/29.95
Origin FX: Screen Saver	26.95
Out of this World	34.95
Pacific Theater of Operations	39.95
Paladin 2	34.95
Patriot	42.95
Pathway to Power	29.95
Pepper's Adventure in Time	29.95
Perfect General	34.95
Pirates of Gold	39.95
Populous II	37.95
Power Pointer	29.95
Prince of Persia II	39.95
PrintShop Deluxe DOS or Windows	44.95/44.95
Graphics Libraries, Business	29.95
Graphics Libraries, Sampler	29.95
Privateer	47.95
Pro League Baseball	34.95
Pro Star: War on the Frontier	39.95
Quarky Turbo Science	29.95
Quest for Glory 3	39.95
Rags to Riches	34.95
Rampart	17.95
Realms of Arkania	34.95
Return of the Phantom	34.95
Ring World	34.95
Ring World: Patriarch's Revenge/premium	34.95
Robocop 3-D	31.95
RoboSport for Windows	24.95
Rock and Bach Studio	34.95
Rome	29.95
Rules of Engagement	39.95
Rules of Engagement II	39.95
S.C.O.U.T.	34.95
Sea Team	37.95
Secret Weapons/Luftwaffe	39.95
Expansion Disk 1 2 3 or 4	19.95
Serpent's Isle (UV part 2)	47.95
Seventh Guest	59
Seven Cities of Gold	31.95
Shadow President	39.95
Shadowgate for Windows	31.95
Shadowlands	29.95
Shanghai II: Dragon's Eye	39.95
Sid Meier's Railroads	29.95
Siege Expansion Disk	20.95/20.95
Sim Ant DOS/Windows	34.95/34.95
Sim City DOS/Windows	29.95/34.95
Sim Earth Windows	29.95/29.95
Sim Farm	34.95
Sim Life	39.95
Software Jukebox: Arcade Builder	39.95
Software Jukebox: The Arcade	39.95
Software's Journey	34.95
Sound Graphics: Aircraft	24.95
Space Inc	34.95
Space Quest 5	39.95
Special Forces	29.95
Spectre Supreme	39.95
Spectre DOS premium	34.95
Spellcraft	34.95
Spellcraft 301	34.95
Spellcraft: Pirates of Realmspace	37.95
Star Control	34.95
Star Legions	37.95
Star Trek Screen Savers for Win	32.95
Stellar Communique	47.95
Strip Poker 3 data disks	29.95/19.95
Summoning	34.95
Sweet & Low: American Folk Songs	34.95
Syndicate	37.95
TA Break Pinball	29.95
TA Break Pool	29.95
Tales of Magic: Prophecy of Shadow	37.95
Task Force 1942	39.95
Task Force: Admiral's Pack	44.95
Tegel's Mercenaries	37.95
Terminator 2029	39.95
The Castle of Dr. Brain	19.95
The Prophecy	24.95
Theatre of War	17.95
Tom Landry Football	29.95
Tony Larussa Baseball II	36.95
Tornado	44.95
Traders	29.95
Treasures of the Savage Frontier	31.95
Trump	29.95
Ultima VII	49.95
Forge of Virtue Data Disk	20.95
Ultima Underworld II	49.95
Ultrabots	37.95
Uncharted Waters	39.95
Unlimited for Windows	31.95
Unlimited Adventures	37.95
U.S. Chess	39.95
V for Victory: Market Garden	42.95
V for Victory: Utah Beach	42.95
V for Victory: Velikye Luki	42.95
Veil of Darkness	37.95
Wayne Gretzky 3	34.95
War of the Gulf	29.95
Warriors of Legend	19.95
Ween: The Prophecy	34.95
When Two Worlds War	34.95
Where: Carmen SanDiego, Each	29.95
Where: Carmen Past	29.95
Where: Carmen Space	34.95
Where: Carmen USA Deluxe	44.95
Where: Carmen World Deluxe	44.95
Wild Science Arcade	34.95
Wilson Pro Staff Golf	24.95
Wing Commander II	49.95
Speech Accessory Pack	15.95
Special Operations #1 or 2	20.95
Wing Commander Deluxe	49.95
Wizardry: Crusaders Dark Savant	39.95
World Atlas 4.0	44.95
World Circuit Champ Edition	39.95
World Science Arcade	34.95
World Circuit Grand Prix	34.95
XWing	39.95
Zodiac Signs	39.95

AMIGA

ATrain	39.95
Agony	29.95
Air Force Commander	34.95
Air Support	29.95
Bard's Tale Construction	29.95
Birds of Prey	31.95
Black Crypt	31.95
Buzz Aldrin's Race into Space	39.95
Campaign	34.95
Carmen San Diego/Each	30.95
Carmen San Diego: America	36.95
Castles	34.95
Campaign Disk	19.95
Castles II	34.95
Civil War	37.95
Conquest of Japan	44.95
Creepers	29.95
Crusaders of the Dark Savant	39.95
Cyber Empires	31.95
Cytron	29.95
Daemonsgate	34.95
Dark Seed	39.95
Death Knights of Krynn	31.95
Deluxe Music II	77.95
DeluxePaint IV (while supplies last)	97.95
Demonink	19.95
Desert Strike	31.95
Discovery Columbus	34.95
Dragon's Lair 3	34.95
Dune	29.95
Elvira: Jaws of Cerberus	39.95
Eye of the Beholder I or II	37.95
Eye of the Storm	29.95
F-15 II	29.95
Fables & Fiends: Legend of Kyrandia	34.95
Fighter Duel Pro	34.95
Final Conflict	34.95
Gateway to the Savage Frontier	31.95
Great Naval Battles	42.95
Harpoon	37.95
Battleset #4	25.95
Harpoon Designers Series Battleset	31.95
Harpoon Signature Edition	47.95
Heimdall	24.95
Indy Jones 4: Fate of Atlantis	34.95
International Sports Challenge	30.95
Jack Nicklaus Unlimited	34.95
Legend of Kyrandia	34.95
Lemmings 1 or 2	28.95/34.95
Light Quest	31.95
Links	29.95
Firestone Countryl Course Disks	14.95
Lord of the Rings 2 or 3	31.95
Lords of Time	29.95
Lost Treasures of Infocom	39.95
Madden Football	31.95
Mega Fortress	37.95
Mission Disk #1 or 2	22.95
Mercenaries	31.95
Megatraveller 2	34.95
Mig 29	30.95
Might & Magic III	34.95
Napoleon	29.95
Navy Seals	22.95
No Greater Glory	39.95
Oh No! More Lemmings stand alone	29.95
Oh No! More Lemm. add-on	21.95
Out of this World	49.95
PGA Tour Golf	31.95
Golf Tournament Course disk	14.95
Perfect General	34.95
WWII Scenario Disk	19.95
Pinball Dreams	24.95
Pinball Fantasy	24.95
Pit Fighter	31.95
Plan 9 from Space	29.95
Pools of Darkness	34.95
Populous II	37.95
The Challenge scenario disk	20.95
Powermonger	31.95
Premiere	29.95
Prophecy of the Shadow	37.95
Red Zone	29.95
Road Rash	31.95
Secret of Monkey Island I or II	34.95
Shadow of the Beast II or III	34.95
Shadowlands	29.95
Shanghai	29.95
Shuttle	29.95
Sim Ant	34.95
Sim City	29.95
Sim Earth	29.95
Solitaires Journey	34.95
Space Hulk	31.95
Star Control II	34.95
Star Trek 25th Anniversary	34.95
Strip Poker 3	29.95
Tales of Magic: Prophecy Shadow	37.95
Terrain Envoy	28.95
The Challenge	20.95
The Light Corridor	29.95
Tom Landry Football	29.95
Twilight 2000	34.95
Ultima Trilogy	37.95
Utopia	29.95
Viking Fields of Conquest	36.95
Warriors of Legends	19.95
Where in the ...Carmen each	29.95
World Circuit	31.95

Call For More Titles!

Software available only on 3.5" disk or premium packs. No individual 5.25" disks are available

800-554-9925

- One of Wisconsin's Top 10 Women Owned Businesses.
- Corporate, Government & School POs Welcome.
- VISA MasterCard No Surcharge on Credit Cards.
- Most Orders Shipped within 48 Hours.
- Software Shipping: only $5 per order, not per title. Hardware: 5% - Min. $5
- C.O.D orders welcome, with only a $6.00 Charge.
- We Ship Latest Version of Software Available.
- All Products Sold Carry Manufacturers' Full Warranties & Documentation.
- APO, FPO HI, AK Puerto Rico & Canadian orders welcome 6% - Min. $6. International Orders Shipped First Class Mail Insured 15% Min. $15. If mail cost exceeds calculated amount, you'll be billed additional.
- Call for Free Catalog & Free Newsletter

Prices fluctuate beyond our control & may change for better or worse. Defective returns must have a Return Authorization number & our 1-800 to obtain a Return Authorization or your return will not be accepted. Shipping & handling are non-refundable. All sales are final. All returns are subject to a restocking fee.

Scorpion's View

Scorpia Finds Plenty of Venom on *Serpent Isle*

Scorpia is an experienced and respected adventure game expert. CGW is pleased to provide this forum for her distinctive and often controversial perspective.

Ultima VII: Serpent Isle is the direct follow-up to *The Black Gate*. The Avatar and trusty companions (Iolo, Shamino, and Dupre) sail off to Serpent Isle, hot on the track of Batlin, who escaped at the end of the previous game. Exploring this mysterious land, they soon discover it was settled hundreds of years ago by refugees from the time when Lord British was consolidating the remnants of Sosaria into the new realm of Britannia. Each group had its own reasons for leaving, and each founded a city of its own: Monitor, ruled by Knights; Fawn, home of the Beautiful People; and Moonshade, dominated by arrogant Mages.

The humans are at war with the Goblin race that had settled there before them. Moonshade, on its own little island off the coast of the main one, is not really troubled by this; Monitor and Fawn bear the brunt of the conflict. It is primarily the Knights and Pikemen of Monitor that defend the human establishments against the incursions of the Goblins. For all that, each town has its infighting, politicking, and petty squabbling. *Serpent Isle* is not a peaceful land.

It is even less peaceful, thanks to the mysterious and deadly storms that roar across the islands at unpredictable intervals. The storms can kill, or teleport people and objects at random. Few now dare to travel the roads or sail the seas.

Underlying all this is the mystery of the Ophidians, a now-vanished race that worshipped the great serpents of Order, Chaos, and Balance. Only ruins decorated with snakes and a few books in a sinuous alphabet remain where once a mighty civilization flourished.

Make no mistake about it: *Serpent Isle* is a complex game, much more so than *The Black Gate*. Many threads are woven into this tapestry, and, at times, it is easy to lose sight of the pattern as a whole. While the Avatar's ostensible purpose is to find Batlin, tracking him down takes a back seat to becoming entangled in the affairs of the island's inhabitants. Even when Batlin has finally been dealt with, there is still at least a good third of the game left to complete. This is not something you play through in a couple of afternoons.

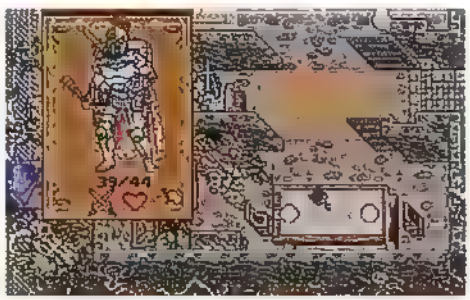
Game mechanics and interface are mostly the same as they were in *The Black Gate*: mouse-driven point-and-click, with keyboard commands supported as well. It is usually easier to use the mouse for most things, although some of the keys can be faster than paging through the icons. For instance, combat mode can be started simply by pressing "C" instead of first bringing up the Avatar's screen and then clicking on the dove/sword icon.

Conversations also use the same method introduced in *The Black Gate*: words are printed directly on the screen, and you click with the mouse on the keyword of your choice. There is no keyboard input here at all.

The music seems to have been brought over wholesale from the previous game; I recall hearing most of the tunes in *The Black Gate*. Some time having passed since then, it's hard to say if anything new was composed for this one, except for the tune that plays while in the serpent gate nexus. Still, it's all good music, so an encore isn't a problem.

There is some speech, although not much. Fortunately, the lion's share of it is by Denis Loubet as the Great Earth Serpent, the best voice in the game. Not that he sounds quite like that in real life; some audio magic was performed on the recordings. No matter, it is well-done and perfect for the part.

Serpent Isle is certainly the cleanest-running product that Origin has brought out in a while. The game is very stable: no bizarre graphics, no missing inventory items, virtually no crashes. Once, and only once, the game froze on me. That was in Fawn, while reading a scroll found on a body. After rebooting and restarting the game, I was able to read the same scroll with no problems. I consider this a momentary hiccup, since nothing even remotely similar occurred anywhere else in the game.



So, the game is clean, the storyline good, many new places to visit, good sound and graphics...what could be wrong? Plenty. Some of it is minor, but there are also some major problems with this game.

It runs under the VooDoo Memory Manager, which was universally hated in *The Black*

Gate. Fortunately, aside from a planned add-in, Origin has announced *Serpent Isle* will be their last product to use VooDoo. That being the case, I will skip my planned diatribe (heh) and only say: let us raise a cheer to this heartening news, and hope we can use our chosen memory managers in future *Ultima* games.

Inventory is the same nightmare it was in the previous game. Items in packs and bags move around, cover each other, and generally make it difficult for you to find whatever you're looking for. On several occasions, I had to start taking things out of the backpack just to locate a particular object. This jostling around may be "realistic," but it does not add anything to the game and can be a great time-waster.

This is especially true of the spell reagents. Even keeping them in a separate bag doesn't help very much. Try locating a dark item, such as nightshade or black pearl, when it's against a black background. It is very hard to keep track of how many you have of each item. What we need here is a "reagent bag," similar to the "rune bag" of *Underworld;* a bag with a *light* bottom that keeps the reagents neatly in place and readily countable. Failing that, it needs at least a hot key of some kind to show how many of each reagent is in the bag.

Food is another sore point. As before, once a party member becomes hungry, he whines and moans about it until you stuff something in his face. Even with a packload of food, he is totally incapable of feeding himself. This is nonsensical. The whole food business itself is a nonsensical and nit-picky detail we can do without. Let us be done with it once and for all. Buy everyone two weeks of iron rations, and they all eat when hungry, instead of waiting, like a baby, to be hand-fed by the Avatar.

The artificial intelligence of the party characters hasn't improved a lot since *The Black Gate*. They have smartened up enough so that those equipped with missile weapons usually stand back to use them instead of rushing up to the front line. However, should you have people set to "attack nearest," and the nearest happens to be something on the other side of a wall, those party members will try to push themselves through the wall to get to it. They completely ignore the visible threat in front of them. Party members also cheerfully walk over or through the most blatant traps, no matter how carefully the Avatar maneuvers. They do not seem to notice these things at all.

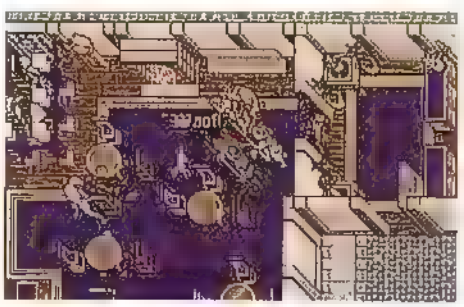
Those are the minor, albeit aggravating, matters. Now we come to the more serious ones. Disk access is the first. The game goes to the drive constantly. The party can hardly take a step or any sort of action without the drive light going on. The more animation of any kind that is happening, the slower the game becomes. It can become excruciatingly slow in some instances, even on a 66 MHz machine. The fastest movement is usually obtained in the open wilderness, on a clear day, with little or no extraneous animation going on (in which case, the party can move quite rapidly). Speed is also better when the Avatar is going solo or has only a companion or two along.

It takes, on average, a minute or more to load in a saved game, and slightly less to save a position, with the files being in the 400-500K range. This is definitely not state-of-the-art, especially when *The Summoning*, whose save files balloon to 700-800K by the end, can save such monsters much, *much* faster. Even with a SMARTDRV cache, I found no material improvement in either disk access or save/restore times in *Serpent Isle*.

Warning: Specific Hints Follow

Where the game really falls on its face, however, is in the construction of some of the "puzzles." In order to explain this more fully, I will have to give away some solutions or partial solutions. Then again, considering the circumstances, this may not be a bad thing.

Up north, after you get through the mountains, one of the first things you find is a small



cave with five pedestals, five Ophidian runes and a barred door. By trial and error (which doesn't take long), you can figure out how the runes should be placed on the pedestals, but this doesn't open the door.

Further north are the Gwani, a peaceful race of fur-covered humanoids. You help them with their current problem (a sick child) and all they say is that perhaps someday they can do something for you in return. They make no mention of the mysterious cave. They seem to know nothing at all and, of course, there is no way you can bring up the matter in conversation. There is no one else around to talk to and really nowhere else to go. You could be stuck here for a long time.

It turns out that you must call in a special Hound to track Barlin at this point. Then, and only then, the Gwani suddenly remember the cave and tell you how to get into it. Why couldn't they tell you this in the first place or why couldn't you simply bring up the matter yourself (having visited the cave)? It is a *very* frustrating sequence.

There is the matter of Shamino's Castle (which does not shed a very good light on his past). You can get in and enter all the outer rooms, but the central keep is barred by a mysterious force field that nothing will dispel or remove. I spent a long time in the lever room over this before finally giving up on it.

Once again, the Hound to the rescue. Here you track someone else, and the trail leads to the castle, where the barrier is now mysteriously gone. No explanation is given for this, it just happens.

In the castle of the white dragon, you must proceed room by room. Most of the doors are locked, and require a key or lever to open them. Eventually, you come to a room with no key, none of those you have work, and there is no lever. This looks like a dead end, but it isn't.

Through most of the game, you learn that a locked door needs a specific key to be opened. Bashing, explosives, or lockpicking just won't do the job in most cases. I tried these methods anyway on several doors in the castle, with no positive result. It was my misfortune to stop before reaching the *one and only door* on this level that could be opened by bashing. Are we having fun yet?

There are other situations like these in the game, which seem designed to frustrate more than anything else. It is especially bad because they are major points, where you are stuck with really nothing else to do (or nowhere to go), until you figure out (through desperate trial and error) what has to be done to progress to the next stage of the game.

Loose ends show up, too. Return to the Bull Inn late in the game and you find that everyone except Wilfrid is dead and Wilfrid isn't talking about it. Apparently, he hasn't noticed that his mother, brother and all the guests have been slaughtered. Worse, a manned guard tower is only a few steps away, and no one there seems to have anything to say about it, either.

Revisit the Gwani and you note that most of *them* are dead, but the survivors seem completely unaware of it. The same holds true in Monitor, where the sole survivor is totally oblivious to the carnage in the city. It is all very exasperating.

In sum, *Serpent Isle* is a good story gone wrong. While the main plotline is solid, execution of it is inadequate. There are irrelevancies (the whole business of Shamino's background is bogus), loose ends, too many poorly-designed "puzzles," and an amazing programming oversight that allows you to complete the game without performing what is supposed to be a crucial ritual.

Origin needs to re-examine *Ultima IV* for a refresher course on the concept of Avatarhood (something that has gone steadily downhill since V), as well as how open game design and logical plot connections are supposed to work. With that, and the elimination of some of the more irritating minor features, the next *Ultima* may well be a game worth playing. *Serpent Isle*, however, is likely to provide more aggravation than enjoyment for most players. **CGW**

(Continued from page 80)

However, we've been doing all this with one of the store's in-house monitors; my own is still in the box. Let's just be certain and try it out before I take it home.

The monitor is defective.

If thoughts could kill, half the world's population would have died in that moment. It is now four weeks, almost the end of January, that I've been without a game computer. Not since I got my first Apple way back in '81, have I ever gone so long without a game to play. Never, with any system, have I had such problems, or been so frustrated. ARRRGHHHHH!!!!!!!! KIIIIIILLLLLL!!

Fortunately, my self-control asserted itself and I did not actually go berserk, even though I certainly felt like it! We managed to get an order in to the manufacturer in time, and they promised the replacement would be there tomorrow.

It actually *did* come the next day, and it actually worked. I lugged it home, and hooked everything up, mainly cables and wires, since all the cards were already inside. Then, I turned the system on, and it booted with no problems.

Okay, so far, so good. Next, re-load all the files backed up from the previous machine. That went well. Try out *ProComm Plus* with the new modem. Hmmm, not dialing. Spend most of the afternoon fiddling around with settings and thumbing through the manual, to finally track down the one letter I needed to change in the modem string to make it work ... but, I make it work.

Let's see how the Gravis Ultrasound Sound-Blaster emulator does with the *Ultima Underworld* demo. Gee (ear to speaker), there *is* some sound there, but it's awfully low. The GUS amplifier is, let's say, weak. I need amplified speakers now. Luckily, the computer store owner has a pair of slightly-used Rolands he doesn't need and sells them to me.

So, it's the last weekend in January, and finally — FINALLY! — the system is together, up and running properly. That's when I discover the Michelangelo virus in the partition table. Well, it could have been something worse; this is one of the easier viruses to remove from the system. Anyway, it's gone, my MS-DOS machine is fine, and I CAN PLAY GAMES AGAIN!!!

The following week, my Apple died.

It is, of course, on the Apple that I answer all the letters I get from *CGW* readers. This, in some ways, was more serious than not having an MS-DOS computer, since I could still reply to questions on games I had played in the past. Now the mail is piling up fast.

Answer by hand? My handwriting was never very legible and has gotten worse over the years since I've been computing. Hey, there are times when I can't even make out my own hand *printing*, never mind writing. It's that bad (well, y'know, it ain't easy holding a pen in a pincer).

The mail continues to pile up. Some of it, alas, gets mixed in with old stuff already answered, and goes out in the trash during one of my rare "clean-up" fits. I don't like to think about that one.

Finally, the Apple is up and running again, and I settle down to the backlog. Slowly but surely, it gets taken care of. At last, everything is caught up, the computers are working, and life returns to abnormality in the cave. WHEW!

So be warned: when the latest in high-tech comes around, let someone else mess with it first!! Don't be the first one on your block (or in your cave) to buy the new toy; it may come with more headaches than you ever imagined.

Okay, next time, we'll return to the usual bill of fare here at the Tale. Meanwhile, if you need help with an adventure game, you can reach me in the following ways:

On Delphi: visit the GameSIG (under the Groups & Clubs menu).

On GEnie: Stop by the Games Round-Table (type: Scorpia to reach the Games RT).

By US Mail (enclose a self-addressed, stamped envelope if you live in the United States): Scorpia, PO Box 338, Gracie Station, New York, NY 10028.

Until next time, happy adventuring! CGW

GAMER'S GOLD

WE PAY CASH FOR USED IBM GAMES

also Nintendo, Super Nintendo, and Sega Genesis

We want your current used games*

1-800-377-8578

call for authorization before shipping

WE SELL USED GAMES

IBM, Nintendo, Super Nintendo, Sega Genesis

All games are tested & IBM disks virus checked

Call for current title availibility

GAMER'S GOLD VIRUS FREE USED GAMES

WE ACCEPT VISA/MasterCard

Most items shipped same day. $5 UPS/$7 2nd Day Air

*Games must be complete with all disks & printed materials and in the original box. Incomplete games will be returned at your expense.

GAMER'S GOLD • 1008 W. 41st Street • Sioux Falls • South Dakota • 57105

Circle Reader Service #58

SOFTWARE CLOSEOUTS

IBM, AMIGA, APPLE, COMMODORE 64/128, ATARI ST, MAC & MORE

IBM BARGAINS UNDER $10

FAST BREAK, Accolade	$9.50
DON'T GO ALONE Accolade	$9.50
OUTRUN, Sega	$9.50
SPACE HARRIER, Sega	$5.00
GUNSHIP, Microprose	$9.50
CROSSBOW Absolute	$5.00
MIND DANCE, Mindscape	$5.00
MY GRAND PIANO,Fisher-Price	$9.50
MAGIC JOHNSON BASKETBALL	$9.50
BEGINNING ALGEBRA, Dinosoft	$9.50
GEN. KNOWLEDGE BUILDER	$9.50
HUMAN BIOLOGY A.E.C.	$9.50
SANDS OF FIRE Three-Sixty	$9.50
ARMOR ALLEY Three-Sixty	$9.50

SIERRA for IBM $20 EACH

QUEST FOR GLORY 2, FIREHAWK, CODE NAME ICEMAN, HEART OF CHINA, KING'S QUEST 1 -or- 4, OIL'S WELL, COLONEL'S BEQUEST, LEISURE SUIT LARRY 1 -or- 3, RISE OF THE DRAGON, THEXDER, MIXED UP MOTHER GOOSE, SPACE QUEST 1 -or- 2 -or- 3. CALL FOR OTHER TITLES!

LAND, SEA & AIR TRILOGY by Microprose. 3 GAMES $20 Includes: AIRBORNE RANGER, PIRATES! & GUNSHIP FOR IBM

Hoyle's Book of Games Vol. 2 SOLITAIRE, by Sierra. $15 Includes 20 Solitaire games with mouse support. Tons of fun!! For IBM on 3.5" disks only

IBM/MS-DOS BARGAINS UNDER $20

Monday Night Football VGA	$15.50
Sharkey's 3D Pool	$19.50
Microleague Football	$14.50
Microleague Baseball	$14.50
F-15 Strike Eagle	$16.50
Solo Flight	$16.50
Tomahawk	$14.50
Star Glider II	$14.50
Xiphos	$14.50
MEGAFORTRESS	$16.50
Gamer Command	$14.50
Sky Chase	$14.50
David Wolf Secret Agent	$14.50
Blue Angels	$14.50
Rocket Ranger	$14.50
Air Strike U.S.A.	$14.50
Blue Max	$14.50
Dark Heart of Uukrul	$16.50
Buck Rogers 1	$19.50
Buck Rogers 2	$19.50
Harpoon Lance	$19.50
Dragons of Flame	$19.50
Questron II	$16.50
Hill Star	$19.50
NEWSROOM PRO	$39.50
CERTIFICATE MAKER	$16.50
EGA PAINT 2005	$14.50
DAS BOOT	$14.50
MANHUNTER NEW YORK	$14.50
X-MEN 2	$19.50
PUNISHER	$19.50
DR DOOM'S REVENGE	$34.50
AMAZING SPIDERMAN	$14.50
SUPER CONTRA	$14.50
TWILIGHT 2000	$14.50
LIGHTSPEED	$14.50
COVERT ACTION	$14.50

IBM SPECIALS WHILE THEY LAST

RED BARON by Sierra	$25.00
BATTLECHESS 2, by Interplay	$19.50
HARPOON CHALLENGER PAK	$25.00

ADULT FUN FOR IBM FROM FREE SPIRIT

SEX VIXENS FROM SPACE	$14.50
SEX OLYMPICS (VGA only!)	$16.50

SOLD ONLY TO ADULTS 21 & OVER.

MINDSCAPE/THUNDER MOUNTAIN SUPER BUNDLE FOR C-64/128

10 GAMES FOR $14.50

Includes: Demolition Mission, Army Moves, Bad Street Brawler, Tai-Pan, Fist, Tri-Cell, Mutants, Cyrus Chess, Doc the Destroyer & Uridium.

LEISURE SUIT LARRY BUNDLE FROM SIERRA for IBM/MS-DOS

Includes:

Leisure Suit Larry 1, 2 & 3 !!

Only $30

MARVEL TRILOGY

FROM MICROPROSE for IBM

Includes:

Amazing Spiderman, X-man & Dr. Doom's Revenge.

Only $20 !!

STAR COLLECTION for IBM

10 GAME BUNDLE

from Electronic Zoo

SUPER SALE $19.50

Includes: Paris-Dakar, Skidoo, 20,000 Leagues under the Sea, Legend of Djel, Mouldy Old Dough, Balloon Lagoon, Mechanic Panic, Plasma Pilot, Space Scapa, & best selling TREASURE TRAP!!

TROIKA 3 pack

from Paragon Software for IBM.

SALE $14.50

Includes: REBEL PLANETS, IVAN & METAL HEARTS. All are Windows 3 compatible with VGA, mouse & sound card support!! Fast paced multi-level arcade action with 100's of levels of exciting play. Strategy & quick reflexes required.

VISA/MC ORDERS CALL TOLL-FREE

1-800-676-6616

Credit Card Orders Only ! ! ! ($25 minimum)

1000's more items for all different computers... Apple, Atari, Amiga, C64/128, MAC, & lots more IBM/MS-DOS !!

COMPSULT

P O BOX 5160

SAN LUIS OBISPO

CA 93403

TO ORDER: Send check or money order including shipping charges of $5 for U.S.A., $8 for Canada, $16 all others. Californians must include 7.25% sales tax. To receive our catalog with 1000's of closeouts for all computer types, send $2 in cash or U.S. postage stamps.. DO NOT CALL FOR A CATALOG!!! To check for an item not listed here, call (805) 544-6616.

Circle Reader Service #43

There's Sound...

"vroom, vroom"

...And There's SoundMan™

SoundMan 16 delivers sound so real, 85% of the time people can't tell the difference from live sound. That's because it's packed with the absolute latest in sound board technology: up to 16-bit/44KHz record/playback, Yamaha OPL-3 stereo synthesis 20-voice chip, 100% Sound Blaster™ and Ad Lib® compatibility, and more. SoundMan brings you the highest CD-quality sound available, for all your games and applications, in Windows™ and DOS. From Logitech, the peripherals leader. At your dealer, or call 1-800-732-3026. ™/® Trademarks belong to their respective owners.

LOGITECH

SoundMan™ 16. Get Real.

The Senseware™ Company

Circle Reader Service #74

A New Dimension

Ed Avis a.k.a. **"Merlin"**
Camden, NJ
"Tyre! Help! I'm wounded."

Tim Tyler a.k a. **"Tyre"**
Toronto, Canada
"Merlin, I'll cast a cure spell on you."

Chat and play games with people from around the world without ever leaving your home.

MPG-NET gives you something you can't find on floppy disk; on-line real-time contact with the most puzzling and challenging entity of all time.

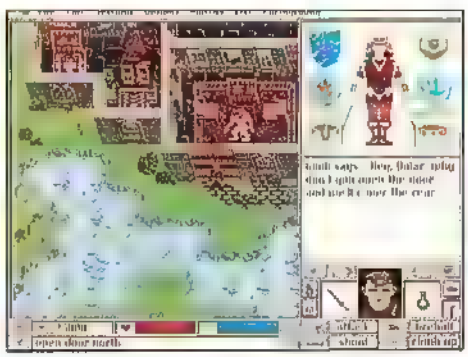
Another human mind

Play pulse-pounding, intriguing, forever challenging games with stunning graphics and vibrant sound. Games that are constantly improving so they won't get stale. Form strategies, share secrets and solve puzzles with up to 100 folks from around the world, twenty-four hours a day.

In addition to our games we have Bulletin Boards so you can write public messages to other players, and Electronic Mail to send private messages. We also have Chat Rooms in which you can shoot the breeze LIVE with people from around the world

All you need is a modem, a phone line, and a computer; IBM PC compatible, Macintosh, or Amiga

DRAKKAR™

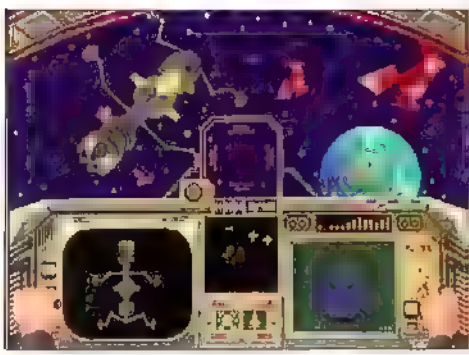


Come visit a land where dragons roam free, rodents grow to unusual size, and adventurers are the endangered species.

Team up with players from around the world. Together, explore mysterious lands, armed only with your enchanted weapons, psionic spells, and wits. You'll find untold riches and glory while solving intriguing puzzles, and destroying the mightiest of beasts

MPG-NET brings you the ultimate in fantasy role-playing

STAR CRUISER™



The year is 2300 A.D. We've discovered stardrive and colonized hundreds of new solar systems. In the process, however, we pissed off some very nasty aliens. To say they hate us is an understatement. They'll do anything to eliminate us from space. No compromises. This is all-out interstellar war. We need your help!

Based on GDW's classic space combat game, MPG-NET brings you the on-line version of Star Cruiser — a 3D, multi-player campaign of split-second action

© 1992 MPG-Net, Inc. Multi-Player Games Network and MPG-Net are service marks of MPG-Net, Inc. The Kingdom of Drakkar is a trademark of Drakkar Corp. Computer network versions of Empire Builder, Star Cruiser, Operation Market-Garden, and the Kingdom of Drakkar are designed and developed by Tunnius Inc. All other brand and product names are trademarks or registered trademarks of their respective holders

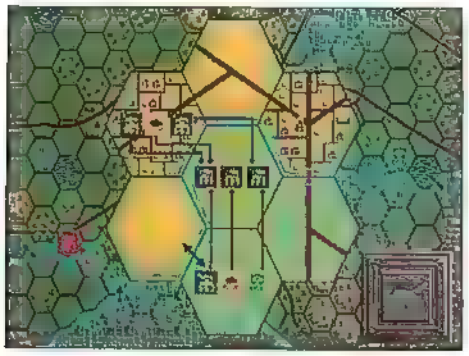
in Entertainment

...Your Multi-Player Games Network.

Lori Zini a.k.a. **"Diana"**
Waco, Tx
"What tore you up, Merlin?"

Brad Elk a k.a. **"Sauer"**
Louisville, KY
"If you need some help, just page me."

OPERATION MARKET-GARDEN™

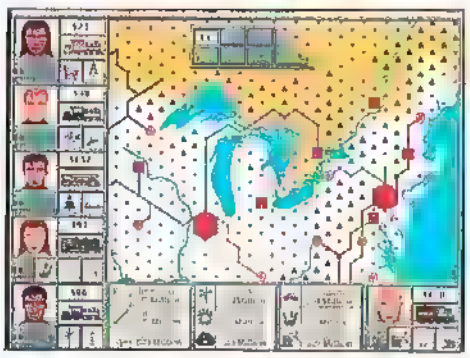


Three elite Allied paratroop divisions drop into enemy territory. Their mission, to seize the bridges leading up to the Rhine — the last obstacle of Allied advancement into the heart of Germany. They almost succeed

Scattered remnants of Axis forces already defeated in France must guard the Rhine — the first-line of defense for the Third Reich. They almost lose.

MPG-NET brings you the on-line version of Operation Market-Garden, GDW's classic two-player war game, based on the biggest airborne operation in history.

EMPIRE BUILDER™



Combining two great American loves: Railroads and Money!

Now you can capture the entrepreneurial spirit of America and build your own railroad empire The wheels of progress are you and up to five other players from around the world, locked in a power struggle of epic proportions.

It takes planning and ambition to build a railroad empire. And only the best will endure. Experience MPG-NET's on-line version of Mayfair Games' award-winning, classic board game.

MPG-NET is accessible from over 600 cities in the United States and over 80 cities internationally.

It costs less than you think: $4.00 per hour in the continental US and $3.00 per hour in the N.Y. city area. These costs are all inclusive. There are no hidden communication fees.

Dial toll free 800-GET-GAME and we'll send you your account number, password, start-up kit, and 5 free hours right away. For more information call 800-245-0317

MPG-NET
Your Multi-Payer Games Network℠
800-GET-GAME
800-438-4263

Circle Reader Service #77

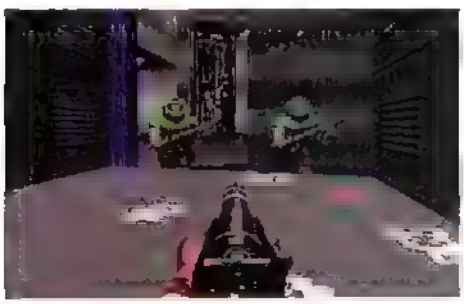
They're Going to Hell for This One!

The Bad Boys at ID Software Take Their 3-D Engine to New Depths

by Chris Lombardi

Sneak Previews are not designed to be reviews. They are feature articles based on "works in progress" that CGW's editors have deemed worthy of early coverage. These articles are not intended to provide the final word on a product, since we expect to publish appropriate review coverage when the game is finished.

This summer marks one year since Id Software dropped unsuspecting gamers into a stunningly realistic Nazi stronghold in *Wolfenstein 3-D*. With its blazing 3-D scrolling and its simple, though extremely intense game play, *Wolfie* quickly became the cat's caterwaul in action games. The Texas-based team of software

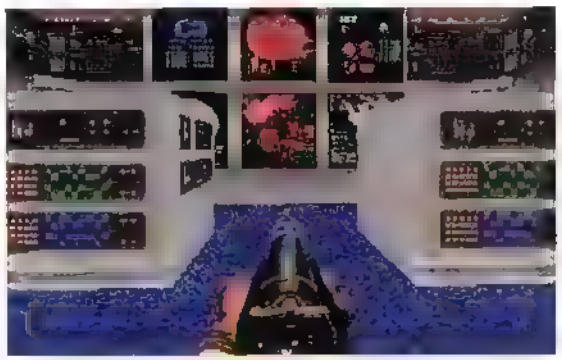


upstarts that brought us this gaming "experience" hasn't been sitting on their C compilers this past year. They've been very busy. So busy, they've probably yet to hang all of their awards on the wall.

We don't know what nasty sludge is seeping into the Texas water table, but whatever it is has given these boys some strange visions, and what's worse, the programming sorcery to carry it out. *Doom* is the name of their next creation, and unbelievable graphics technology is their game. *Doom* is, not too surprisingly, another 3-D action game based on Id's award winning game engine. But what is surprising is how far they've taken this new incarnation beyond *Wolfenstein*. *Doom* is not the typical next generation technology jump. It's a high-altitude, wind-aided, Carl Lewis of a leap ahead.

Gamers who choose to accept this new mission will find themselves in the skull of a space marine, the likes of which we saw die *en masse* in the film Aliens. In fact, the script of this game could be transformed into *Aliens* with a simple Search and-Replace and a slight twist of setting. There you'll stand, playing cards with three other space station Rent-A-Marines, popping powdered donuts and jawing about the red light delights to be found planet-side, when the alert klaxon sounds. But it's not another genetically engineered gerbil loose on aisle 12 — there's real trouble about, and that straight flush you were just dealt is shot to Hell.

Strutting out into the hallway with well-armed cocksureness, you see a sight that makes you regret that your combat briefs are airtight. It's a muscular, horny, pizza-nightmare of a demon with a soul eatin' grin. Yes, he wants your immortal being, and, no, he's not beyond using gross surgical means to get it. If the trigger finger is fast enough, you'll live to shoot another, and your multi-level quest to find the source of these soul snatchers will have begun. Off you go, four better-armed, though less lyrically endowed Dantes on a circle by circle descent to God-knows-where.



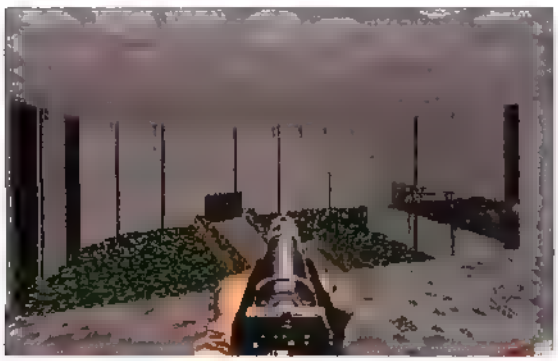
Wolfie players who ventured solo into Hitler's den may now enlist help in *Doom*. *Doom* is (God help us) multiplayer. Those fortunate enough to have access to a network will be able to hunt by fours. Those of lesser fortune, though blessed with modem

and a friend, will be able to hook up remotely. The rest of us can play with ourselves; a state of affairs to which we computer gamers are well accustomed.

As mentioned, *Doom* is a great improvement over *Wolfie*. One glance at a scrolling screen is enough to prove it. Whereas *Wolfie* had nicely textured walls with bit-mapped adornments, *Doom* has opulently textured walls with bit-mapped adornments. Whereas *Wolfie* has bare ceilings and floors, *Doom* has carpet, tile, ceiling panels and light fixtures. There are immense computer banks with rows of important looking lights, and monitors displaying bit-mapped planets and space station maps. There is furniture: tables, chairs, counters and crates — there are even cards on the table for the poker game mentioned earlier. Gamers will also be able to put their own touch on the surrounding, as one's bullets will pock-mark the walls, which will beat those territorial markings for the rest of the game. If the environment of *Wolfie* "put you there,"

then *Doom* will pick you up, hurl you in, close the door, and turn the key.

Ever wonder how the Nazis kept their fortress so well lit in *Wolfie*? Well we hadn't either, but now that we've seen *Doom* the question does come to mind. One of the more impressive features of the graphics is the addition of light, or rather, the removal



of it. There are gorgeous lighting effects in *Doom*; long shadows stretching from doorways, overhead beams casting patterns on the floor, flickering fluorescent bulbs as irritating as in life, and caverns so black you can't see your pistol muzzle in front of your face. If you thought bumping into a Nazi henchman in a suffocating maze was unnerving, try knocking head-long into Satan's soul steward in a darkened alley.

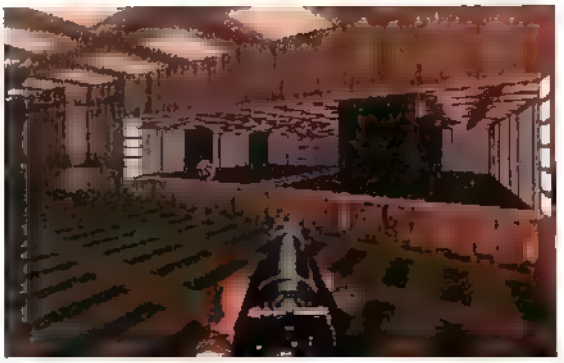
Another major shift from *Wolfie* to *Doom* is in the lay of the land. The *Doom* room architecture now includes non-orthogonal walls — a college boy's way of saying that they are not restricted to right angles. In addition, there are now variable ceiling heights and multiple levels within a level, as one might find in an *Ultima Underworld*. In *Doom* there are curving and descending hallways, stairs to upper and lower areas, recessed "conversation pits," and elevated platforms. The effects they've created with these new tools are enough to

cook a gamer's circuits. At one point, you can climb to an upper level and look out across a vast area of virtual space with all sorts of graphic monkey-business going on down below. It's the computer game equivalent of one's first Grand Canyon vista.

The Id 3-D system has changed very little in the actual mechanics of the game. Keyboard users will still have the Alt, Cntl, and arrow keys as their best friends, and the number keys will still cycle through the ridiculous stockpile of weapons that one keeps on their person. The weapons still suggestively protrude from the bottom of the screen, and they still animate in visceral pulses of power, though they do wild new things. There's an animated, thrusting double-bayonet that reaches out into the screen, as well as a shotgun that one's bit-mapped arm will pull back and cock after every blast. There are other, more twisted armaments to be found and fired, though we'll save some surprises for later. One new and welcome interface addition is an automap feature that will keep track of the sights seen and the places yet uncovered. This will be an essential part of a *Doom* session, as the non-orthogonal floor plans are disorienting and labyrinthine.

Again as in *Wolfie*, the primary directive is to scavenge the floors for ammo, health rejuvinators and treasures, while fighting back hordes of baddies that lurk in every dark corner. Those who wished for a bit more interactivity in the world of *Wolfie* will be satisfied — a bit. There are switches on the walls that can be flipped to interesting effect. Walls will move, platforms will rise from the floor or descend from the ceiling. There's even a room in which bits of the floor pulse up and down like pistons, making for a seasick trip across the hall. Id hopes to make some of the computer terminals interactive, though they hadn't implemented that in their latest working version. Basically, as the mechanics go, *Doom* is the same "hitch up yer jockstrap" shoot-n-scrounge as *Wolfie*, though on a completely different planet.

The question that comes to



mind these days when discussing a game of such graphic intensity is the computer horsepower required to play it. In its current state, enjoying the full experience of *Doom* will probably take a muscular 386 machine; however, there will be options to resize the graphic window and switch off some of the graphic detail so that lower-end gamers will be able to play at a decent clip. Increased realism has its costs, though realism of the *Doom* kind may make it worthwhile.

August looks to be the month in which gamers will be Doomed to wander shadowy halls rife with Satan's spawn. Like *Wolfie*, *Doom* will be distributed through shareware channels and direct from Id. The first episode (one level) will be freeware and will offer frugal graphics compared to the rest of the game. However, in the registered version, Id won't hold back. Who knows to what depths Id will go to bring this virtual experience to a bullet-casing littered end? One just can't be sure of such things with these Id guys. There's only one thing we can be sure of — we'll have one Hell of a time. CGW

European Invaders?

CGW's Foreign Agent Stalks Europe's Premier Computer Show

by Robin Matthews

Lord British, Chris Roberts, Sir Tech's Robert Sirotek, Leisure Suit Larry, and a six foot tall *Zool* — were all in town (old London Town that is) in April '93 for the Spring European Computer Show. Every year this major European computing event gets more important, and although there did not appear to be too many big releases, there were some real surprises.

The Yanks are Comin'

The **Electronic Arts** stand was surprisingly dominated by just one piece of software — but what a piece of software — **Origin**'s long awaited *Strike Commander*. Graphically and audio-wise it seems to be all that has been promised, and with the full version coming in around the 50 Mb (!) this is certainly one of the biggest releases of the year. **Sierra**'s stand was back to back with that of **MicroProse**, and both US giants were showing off a couple of new releases. MicroProse had their new UK-written multi-aircraft flight combat sim, *Dogfight*, and the usual collection of "F-somethings" over various platforms. *Legacy*, their new UK-produced horror adventure looks tasty and should be opening its coffin any night now.

Sierra has had a busy period with lots of new PC games, but it was two products under their **Dynamix** label that attracted most attention. *Aces Over Europe* is the latest add-on to the excellent *Aces Over The Pacific* flight sim. Apart from upgrading the game's AI, it introduces several new plane types, many of which make their welcome debut on any PC simulation: the British Spitfire, Tempest, Tornado, Mosquito, the German Me 109, Focke Wulf 190, and the Me 262 jet. This range has now snatched the crown held for so long by **LucasArt**'s *S.W.O.T.L*, but Lord British did mention that one future project is to adapt the *Strike Commander* engine to a WW2 flight sim...very interesting.

The other **Dynamix** title is their first attempt at serious role playing, *Betrayal at Krondor*. This is a CRPG based on the respected *Riftwar* novels of Raymond E Feist, and claims to be the largest gaming world created in any similar game. The explorable area is stated to be some 224,000,000 sq ft, as opposed to 5,290,000 sq. ft. in *Ultima VII*, and a "small forest and multi-level dungeon" in *Eye of the Beholder* (all figures and quotes from Sierra's distributed PR materials).

Over Here

Coktel Vision's stand caused many a queue as people stopped to look at the CD version of *Inca*, with more of those amazing graphics and some equally stunning sounds. The UK's own **Ocean** had a couple of titles on offer, including plugging the forthcoming *A-Train Construction Kit* from Maxis. Other titles in the pipeline include yet another golf game, *International Golf Championship, Odyssey* - a sequel to Epic (hope its better) and a snazzy looking flight sim entitled *Inferno*, an update of the elderly, but still excellent *F-29*.

Krisalis was keen to show all of its new sci fi adventure *Shadoworld*,s and it certainly is a neat piece of programming—it was soothing to see the software demonstrators managing to get the space marines killed as often as this reviewer did!

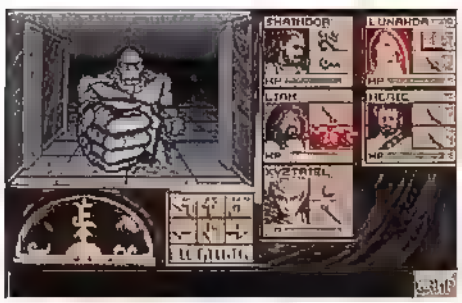
Sheffield-based Gremlin Software had a very busy show, exhibiting the Amiga and now PC versions of the very popular arcade game, *Zool*. This is among the sharpest arcade game on the IBM and even a six foot tall Zool wandering around couldn't steal attention from the forthcoming *Little Divil*. This is a great game that is graphically like a Don Bluth title but has some cracking puzzles and problems. The animation is top notch, controls are good, it has wit, and bags of gameplay. This could be the surprise release in the next few months. Finally on the **Gremlin** stand was their new driving game *Nigel Mansell's Racing*, based upon his Formula One Grand Prix experience, not his Indy Car stint. This is a straightforward arcade game, and the least said about it the better. Bearing in mind that the crashes (even into walls Nigel!) are quite tame, this will not be the best value product this year with its asking price.

Impressions is now a two-country software outfit and is hiring software programmers at a rapid pace. *Cohort 2* has just come out, but two other products were the reason for stopping. *The Blue and the Gray*, **Impressions'** US Civil War game is a progressing treat, and Ed Grabowski was keen to stress the importance of getting this one right. "We are using some of the best people available to ensure the most historical accurate miniatures wargame...this will be the best release, and we are very excited by it." The other area of interest was the use of voice commands with *When Two Worlds War*, and it is uncanny to see the effect of speech on drop down menus and commands.

Psygnosis from Liverpool, now working closely with **Sony**, seems to get better each year, *Combat Air Patrol, Walkers, Hired Guns* and a CD-ROM product *Microcosm*. The star of their show, though, was definitely the brilliant *Lemmings 2*.

US Gold maintains a big presence at the ECTS, and it seems that they are getting more and more PC orientated. The main new products on show were the add-on disks for *Commanche - Maximum Overkill* (more whoosh and bangs, but with even better scenery), *Flashback* from **Delphine**, the *AD&D Construction Kit* (the first decent build-your-own?), *Dark Sun* from **SSI**, the conversion of the best selling German RPG *Blades of Destiny*, and the eagerly awaited *Eye of the Beholder III*.

This third (and supposedly final) episode in



Eye of the Beholder III

SSI's best selling series is sub-titled the *Assault on Myth Drannor* and is set in the Forgotten Realms world. The party of heroes is sent to recover an artifact of divine power from the dread undead lich Achwellan. The plot is as old as the Dwarf mines but the gaming system looks a little fresher. The **Westwood Studio** team responsible for the good *Eye of the Beholder I* and the better *EOTB II* has now moved onto adventure worlds anew and it seems that SSI has had to develop their own gaming engine from scratch. The finished product looks very similar to that used in both the earlier titles, but possible goodies like auto-mapping and a genuine free flowing 3-D environment are not within this product. Enhancements do include group combat, external locations, and some areas that are underwater. One's characters don't exactly swim through these scenes, but the effects are still good and add to a game that claims to be 50% larger than *EOTB II*.

Shortly after seeing a preview of *Beholder III*, the new **Westwood** adventure title, *Lands O'Lore* was also previewed. The latter appears to use a straight development of the original Westwood *EOTB* engine, now released from some of the limitations of the AD&D worlds. This looks a fare nicer product than the SSI offering. Time will tell, but it seems likely that SSI will try and get *EOTB III* out ASAP to at least capitalize on that release before the obvious comparisons are made with the new Westwood offering.

Lands O'Lore

Virgin and **Westwood's** *Lands O'Lore - The Throne of Chaos* would take the award for the most surprising new game. *Lands O'Lore* is not another graphic adventure in the *Legend of Kyrandia* vein, but, as mentioned, is styled more after their previous *Eye of the Beholder* release. Led by another terrific opening sequence, the player is introduced to a wonderfully revolting villainess in the form of Scotia. To all appearances she seems beautiful, but this agent of the Dark Army is actually a horrible hag capable of changing her shape at will. Eight distinct story sections, 30 unique areas, from castles to dungeons, swamps, ancient ruins *and* The White Tower. No longer fettered to the AD&D system, Westwood has opted to adopt a less statistically intensive approach and go for simplicity. Character statistics are now reduced to: Attack, Defense and Magery.

The interface is a slick update to the *EOTB* system. Movement and direction changes handled in discrete "square at a time" moves via a bank of direction arrows; inventory management and object manipulation are all

Legend of Kyrandia II

fully mouse driven; and the graphics are an absolute delight. There is a fair proportion of combat in real time. Westwood states that there will be more use of magic spells in *LOL*, and the accompanying graphic and musical effects look *very* special.

Another Westwood release on show was the CD version of *Legend of Kyrandia*. This debut release for **Westwood/Virgin** was the surprise graphic adventure of 1992 and now hits the silvery disk with another 85MB of digitized speech and sounds. All conversations are now spoken by an ensemble of professional actors and actresses, and the casting director has done a great job. The splendid nasty of Malcolm is particularly bitter and twisted, and he cackles and jeers his way through this stylish adaption. The plotline and puzzles are the same as the disk-based release, but this is no mere shovel-ware. The CD version of *Legend of Kyrandia* will be available for multimedia PCs in the Summer of 1993.

Also about to be released on CD are two of **Virgin's** recent biggies, their *Space Simulation Shuttle* and their involved sci-fi strategy game, *Dune*. *Shuttle CD* will contain over 45 minutes of sampled speech that will allow all communication between the Space Shuttle and mission control to be spoken. Add to this a full blown space encyclopedia with more than 1,000 VGA photographs and over 150,000 words of text along with several major enhancements to the control system, and you have possibly the most comprehensive title of its type.

Other forthcoming PC releases from Virgin include *Caesar's Palace*, a gambling compilation running under Windows with four versions of Poker, Blackjack, Baccarat, Roulette, and Craps, a football game from the programmer of *Kick Off 1* and *2* called *GOAAAAAAAAAL-A* (Amiga, ST and IBM PC), *Beneath a Steel Sky* (billed as the world's first computer-based animated comicbook), *Archie Maclean's Pool* and two Amiga/ST titles in *Cannon Fodder* and *Apocalypse*.

The End of the Show as We Knew It

ECTS is coming of age. Many people now take this show very seriously as witnessed by the various dignitaries and icons that attended this year. Last year the show was still awash with the Amiga and its software. This year it was hardly mentioned, let alone seen. Lots of talk about 3DO, but the real buzz was CD. The consensus seemed to be that it was bound to happen, and soon, requiring only a couple "must-buy" products to finally get it airborne.

ECTS, which now bills itself as the world's only dedicated trade event for computer and video games, was held from Sunday 4th April to Tuesday 6th April 1993, at the Business Design Centre, Islington in London. It is traditionally held as both a Spring and Autumn event. **CGW**

Letters from Paradise

Caught in the Net

Thank you for taking the time to review *The Kingdom of Drakkar.* We were delighted to see your magazine review one of the games offered on our network

I would like, however, to update your readers on some changes that have taken place here at MPG-Net. Since *CGW* went to press, we have made some price changes. The maximum cost for connecting in the continental United States is now $4 per hour through the network nodes. In addition, MPG-Net supports two local nodes of their own. Our Poughkeepsie area node (914-724-3940) is available for $2 per hour. Our New York City node (212-643-0633) is available for $3 per hour. We plan to add more local nodes in the future.

If you or any of your readers have any questions or wish to find out more about our network, call 800-438-4263 (GET GAME) and we'll be happy to assist you.

Janet Brodhead
MPG-Net Director of Customer Service

Thanks for the update, Janet. We're always glad to print news about lower rates.

SEALed With A Kick

Warning: *This letter contains strong language which may be offensive to some readers.*

I must object to the comments by Johnny L. Wilson in his "Dancing with SEALs" sneak preview in issue #106. How valid is his preview of a game based on the SEAL teams when he did not serve and proudly parades his anti-war attitude while ridiculing his acquaintance's son for his favorable viewpoint of special forces and claiming that *Apocalypse Now* and *Platoon* are realistic films.

I served in Vietnam as a SEAL. We supported riverine operatives and helped the Navy PBRs (Patrol Boat/River) to interdict VC supplies shuttled down sampans and portaged through shallows by bearers. We intercepted VC couriers and after killing or capturing them, passed the information they were carrying to Navy Intelligence.

I consider *Platoon* absurd, totally unrealistic and pure propaganda. *The Green Berets,* while being propagandistic on the other side, was much closer to reality, aside from filming the setting sun in the wrong direction, and instills a proper patriotic attitude in the boy mentioned.

Most Americans have a strange reaction to the act of killing. In real life, you shoot the enemy and you kill him dead, whether or not he is armed, whether or not he is going for his gun, whether he looks dangerous or appears benign. That way, you stay alive and your men stay alive. Many of our senior officers and civilian leaders do not believe this. They would rather that we got killed than our enemies did. That attitude is stupid and it is wrong! My interrogation techniques could get a little rough; my guys could make hamburger out of two or three young, innocent-looking, unsuspecting VC. I did not worry about whether or not I was killing the VC properly (what *is* improper killing I wonder?) because at least my guys and I were out in the boondocks killing 'em, not sitting behind some desk or in a cozy college stroking our meat.

To me, a Purple Heart is not a badge of honor. I consider them enemy marksmanship medals and I am happy not to have ever "won" one. In battle, I always kill my enemy before he has a chance to kill me and use whatever it takes. Never did I give Charlie an even break. I shot from ambush. I used superior firepower. I never engaged in hand-to-hand combat unless there was absolutely no alternative. To me, the combat knife should be a tool, not a weapon. All the whiz-bang knife fighting, karate/judo/kung fu b.s. you see in the Rambo-Jambo shoot-'em-up movies are just that: bullshit. The real-life rules of war are simple and effective: stay at arm's length whenever possible and shoot the shit out of the enemy before he sees you. That is not ruthless, immoral or unfair. It kept my SEALs alive and there were fewer of the enemy. Keep your anti-American, anti-war attitudes out of your reviews and have veterans decide if a game realistically portrays combat.

Harry
Chicago, IL

Dr. Wilson responds: I should have thought that the empathy that I, an admitted opponent of the Vietnam Conflict, gained for Vietnam veterans from my experiences of playing SEAL Team *would have proven something of the healing value of the game. I also would have thought that my pointing out how easy it is to differentiate targets in the simulation, as opposed to the nightmare reality faced by you and your colleagues, would have indicated that the playing experience had brought at least a minor degree of additional understanding of the difficulties you faced. I said that my goal in playing the game was to survive. Your letter sounds like that was a realistic goal in the actual experience. That seems a point in the simulation's favor.*

I am sorry that you felt I was "bragging" about the purple hearts earned by my character. I was intending to show what an "iffy" experience each mission had been for me. Indeed, I talked about the purple hearts and unsuccessful missions in the same breath. What I was attempting to show was how this program could increase one's sensitivity to the Vietnam experience, even to those such as myself who had seen the Vietnam vets as being "on the other side" because they weren't protesting with us. Playing the missions in the SEAL Team beta reminded me in a most powerful way that those involved in the conflict were doing their best in a thankless, impossible task.

By the way, I was not the one who called Platoon realistic, it was the Vietnam vet of my acquaintance. Further, he was not disappointed with his son's desire to serve in the armed forces, but rather with his son's obsessive desire to see combat.

For a different take on the same coverage, please read the following letter.

Border Crossing

I've been following this great magazine since 1985. There certainly have been a lot of changes in computer gaming, as well as changes in your magazine. I have always felt that your editorial staff has been responsive to your readers and always tried to present the best critical judgment on the current games. For a good job well done, I congratulate you. It is no small effort making it to issue #106.

We Will Beat ANY Nationally Advertised Price*.
We have more titles not listed. Call for the best prices.

BIT WIT SOFTWARE

Hours:
9 am to 9 pm
Central
Standard Time

P.O. Box
115023-343

Carrollton,
Texas 75011

800/259-2453

Fax
214/306-9603

A Train	$ 38
A Train Construction Set	22
A10 Tank K'iller 1.5	34
Aces of the Pacific	39
Aces of the Pacific: Disk 1 & 2	20
Alone in the Dark	35
Ashes of Empire	45
Batman Returns	37
Battlechess 4000	30
Battles of Destiny	38
Betrayal of Krondor	39
Buck Roger's: Countdown to Doomsday	16
Buck Roger's 2: Matrix Cubed	16
Buzz Aldrin's Race into Space	38
Caesar	35
Castles 2: Siege & Conquest	36
Civilization	39
Comanche Max mum Overkill	43
Conquered Kingdoms	35
Conquest of Japan	34
Conquests of Longbow	36
Creepers	30
Dagger of Amon Ra	39
Darklands	39
Daughter of Serpents	32
Discovery: In the Steps of Columbus	34
Dune 2	35
Eco Quest 2: Lost Secrets of Rainforest	34
Elvira 2: Jaws of Cerberus	40
Empire Deluxe	35
Eric the Unready	35
F15 Strike Eagle 3	44
F15 Strike Eagle 3: Limited Edition	49
Falcon 3.0	45
Floor 13	15
Front Page Sports Football	39
Gateway	32
Global Conquest	36
Goblins	24
Great Naval Battles	42
Great Naval Battles: Disk 1-3	19
Hardball 3	33
Hardball 3: Disk 1	17
Harrier Assault	39
Hong Kong Majong Pro	32
Humans, The	21
Inca	34
Indiana Jones 4: Fate of Atlantis	34
Jack Nicholas Signature Golf	40
King's Quest 5: Absence	36
King's Quest 6: Heir Today	39
Laser Squad	30
Leather Godesses of Phobos 2	25
Legend of Kyrandia	35
Legends of Valor	38
Lemmings	29
Lemmings 2: Tribes	32
Line in the Sand	24
Links 386 Pro	39
Links 386 Pro: Disk 1-3	20
Lord of the Rings 2: Dark Towers	35
Lost Files of Sherlock Holmes	41
Lucas Arts Classic Adv. 4 pk	38
Maelstrom	39
Magic Candle 3	38
Mega Lo Mania	31
Megafortress Mega Pack	38
MiG 29 Fulcrum	30
Might & Magic 4: Clouds of Xeen	37
Monopoly Deluxe	34
New York Times Crossword Puzzles	29
NFL Football	30
No Greater Glory	20
Out of this World	36
Pacific War	40
Patrol	42
Perfect General	32
Perfect General: DD1	22
Police Quest 3: Kindred	34
Populous 2	38
Power Game Software 5pk	45
Powermonger	$ 32
Quest for Glory 3: Wages of War	35
Rampart	26
Realms	17
Red Baron	36
Rex Nebular	39
Kingworld	35
Rollerblade Racer	25
Rome: Pathway to Power	30
Second Front	20
Secrets of Monkey Island 2	38
Shadow President	43
Siege	38
Siege: Dogs of War	19
Sierra Award Winners 3Pk	45
Sierra Family Fun 3pk	39
SimCity	29
SimEarth	40
SimLife	40
SpaceQuest 4: Roger Wilco	37
Space Quest 5: Next Mutation	38
Spaceward Ho	38
Specter	35
Spellcasting 301: Spring Break	34
Star Control 2	34
Star Legions	37
Star Trek: 25th Anniversary	34
Strip Poker 3	31
Strip Poker 3: Disk 1-5	17
Stunt Island	34
Summoning, The	38
Take A Break: Crosswords	29
Task Force 1942	39
Tegel's Mercenaries	38
Terminator 2029	39
Theater of War	31
Tony LaRussa's Ult. Value 5 pk	35
Trump Castle 3	34
Ultima 5: Warriors of Destiny	35
Ultima 6: False Prophet	39
Ultima 7: Black Gate	45
Ultima 7 Part 2: Serpent Isle	45
Ultima Underworld: Stygian Abyss	45
Ultima Underworld 2: Labyrinth of World	46
Utopia	31
V for Victory: Utah Beach	44
V for Victory 2: Velkiya Luki	37
V for Victory 3: Winter Garden	44
Valhalla	40
Veil of Darkness	40
Western Front	20
Wilson Pro Staff Golf	28
Wing Commander Deluxe	45
Wing Commander 2	45
Wizardry 6: Bane of the Cosmic Forge	34
Wizardry 7: Crusader's of the Dark Savant	39
Wizardry Trilogy: 1-3	31
World Circuit	34
X Wing	39

Joysticks & Game Cards

CH Game Card III	$ 31
CH Flight Stick	44
CH Mach III	31
CH Virtual Pilot Flight Yoke	70
Quick Shot Game Kit	32
Suncom G-Force Flight Yoke	55
Thrust Master Joystick	69
Thrust Master Weapons Control	75
Thrust Master Pro Joystick	109

Sound Cards & Speakers

Gravis Ultra Sound	$ 126
Koss HD/1 Speakers	30
Koss HD/4 Speakers	45
Media Vision Thunder Board W/F15	84
Media Vision Pro Audio Spectrum 16 Bit	179
Sound Blaster	94
Sound Blaster Pro 8 Bit	184
Sound Blaster Pro 16 Bit	220
Sound Blaster Pro Basic 8 Bit	154

Most items shipped same day • UPS add $4 per order • 2 Day Air add $6 per order

Policies: All sales final. Check compatibility before you buy. We accept Visa/MC, money orders, personal checks (please allow 2 weeks for check to clear). Defectives replaced with same product. Price, availability & shipping times subject to change. Texas residents add 8.25% sales tax. *Does not include closeouts, liquidations, or limited quantities.

I find myself in a quandary, critically, technically, and in a matter of personal taste. First, the technical:

1. I do not have the bucks to purchase a new computer, nor is my computer one that can be upgraded with a new mother board. I am rapidly finding myself left behind as more and more games require over 10 MB of hard drive space, as well of oodles of memory and speed that my 286 simply cannot muster. Most of the games that I would have played are now unplayable on my machine. Ah well, such is the curse of outdated technology.

2. As I peruse the games in issue 106, and as I browse my favorite software store, most of the games I see really don't interest me. Many "walk-abouts" that are just coming out seem to be simple rehashes of old Sierra and Infocom titles. Something as unique as *Lemmings*, as creative as *Heaven & Earth* or as captivating as the original *Eye of the Beholder* series simply seems to have gone the way of the old 10 MHz machines. This issue's emphasis on telegaming (again, prohibitive for me because of big bucks) and all the war strategy games leaves me cold. The "Taking A Peek" section offered nothing that hasn't been done before. I just don't think the industry is growing or developing newer and more creative games. It seems the industry is depending on technology (faster machines, better graphics, more disk space or CD-ROM) rather than using the old noggin to generate a neater idea of a story or make a better game.

3. And now for the criticism. The cover. I went to college during the Vietnam era. My memories of war are not glorious, nor do I think wars teach strategic lessons that can't be learned somewhere else. Having someone dressed in military uniform with automatic weapon in hand, trying to sight the enemy in what seems like a jungle setting is not my idea of fun and games. It instantly brings images of body bags, exploding mines (with flying body parts), friends killed and a black marble wall in Washington. The blood red border reinforces the death motif stronger than you realize. Your art department could not have done a better job of portraying an image so full of exactly the opposite of what *CGW* is about.

David C. Hicks
Whiteland, IN

The cover photo was not just someone dressed in a military uniform. It is a historical picture and, along with the game, helps to teach some important lessons from history. We do not believe that history is learned in denial of or isolation from some of the uglier aspects of the reality. In SEAL Team, gamers are faced with choices similar to those faced by individuals in realistic situations. Without such products, based on painstaking research as opposed to conceived in the minds of the design team, our understanding of the past would be much lessened. We believe that covering such games does teach important lessons. The article tried to point out some of the differences between the game and reality. Those were lessons that were brought powerfully home to me in the course of playing SEAL Team. We did not intend to glorify war and did not feel that this was the purpose of the EA product. Instead, we thought it was a personalization of war that may make individuals think twice about its so-called glory.

As for the creativity lag in the industry, we recognize the validity of some of your concerns. We see too much MOTS, as well. Yet, designers have to be careful because the market doesn't always like innovation. Think about such games as Trust & Betrayal: The Legacy of Siboot *and* Powermonger. *Both had extremely innovative elements, but were not well received by the gaming public.*

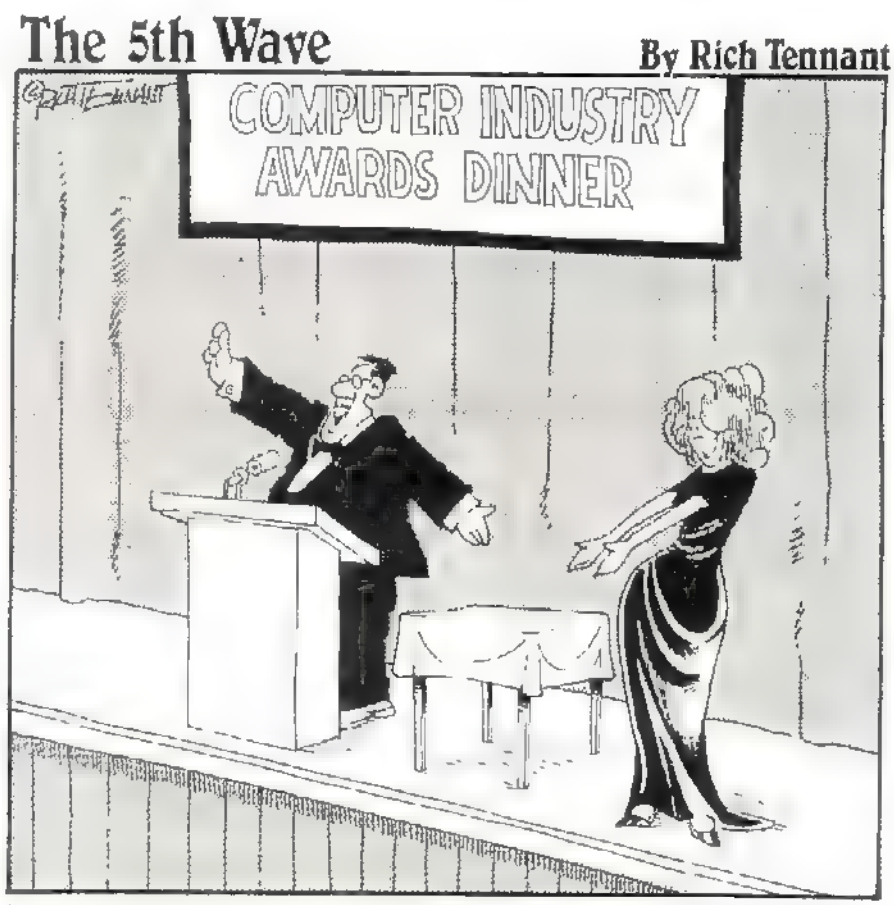
As for the machine requirements, we also see products like Civilization *and* Conquered Kingdoms *that do not push the edge of processing power, yet provide unique, creative gaming experiences. For CRPGers, the best solution may be to buy a construction set like* Interplay's The Bard's Tale Construction Kit *and* SSI's Unlimited Adventures *in order to make their own quests.*

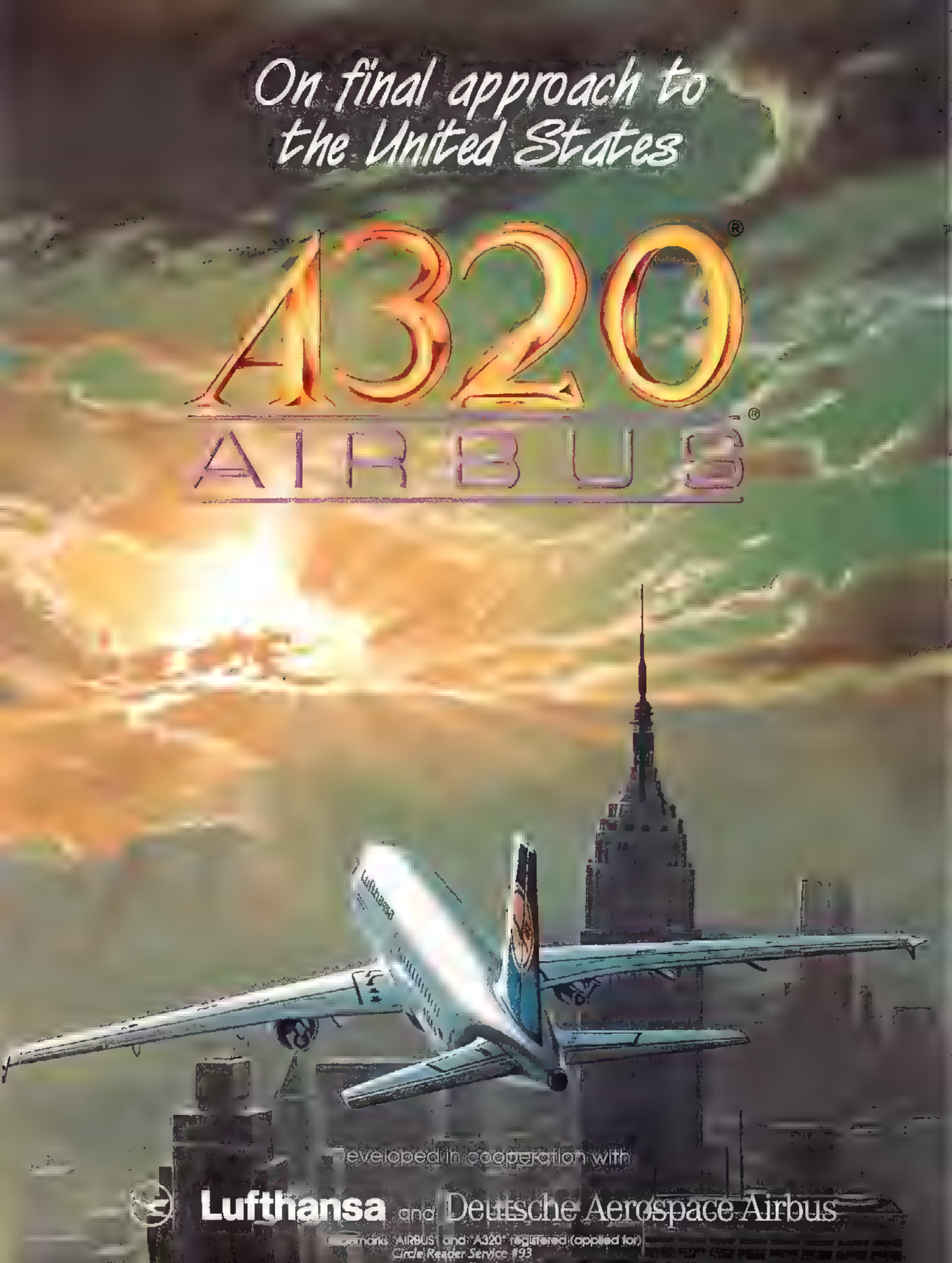
Computer Wargaming Hurl

I am appalled that *CGW* continues to expand Computer Wargaming World each month. A full third was dedicated to CWW this month, though only 20% of the readership are wargamers. Being into CRPGs/Adventures, I was very disappointed this month! Where was Scorpia? We make up 25% of the readership and had nothing of interest in this issue. *Space Quest IV*, again?

Adam Mayo
Greenville, SC

Scorpia's presence was reduced due to her severe withdrawal pains when she was without an MS-DOS computer. She was able to stay on-line with her old Apple II, but we couldn't find any new games for her to review on that platform. As for the CWW space allotted, we do not choose wargame coverage over CRPG/Adventure coverage. We simply review all the games in as timely a manner as we can. Sometimes, CWW will be large and at other times, we will get letters from wargamers complaining about how much CRPG/Adventure coverage we give. It's a two-way street and we try to be fair about it. The reason it seems CWW gets more coverage is because of the specialized strategy articles contained within. CGW




On final approach to the United States
A320®
AIRBUS®
Lufthansa
eveloped in cooperation with
Lufthansa and Deutsche Aerospace Airbus
Trademarks "AIRBUS" and "A320" registered (applied for).
Circle Reader Service #93

*inter*media or Intermediate Technology?

New Visions and Old Questions Animate Multimedia Conference

by the CGW Staff

Intermedia '93, the heir to the International Conference on Multimedia and CD-ROM, featured an odd mix of skeptics and visionaries. One of the highlights of the conference was Mark Cantor, the founder of **Macromind** (publisher of Macromind Director, the tool used as an authoring tool for many CD-ROM entertainment products), boldly stating in a general session that he didn't think CD-ROM products were very interesting. Another was **NEWS Electronic Data** executive, John Evans, comparing the average user of smart TV with his labrador retriever. Just as his dog gets confused whenever he has to go after more than one stick, so the average couch potato might become lost in the possibilities of interactive TV. More substantive was **Tele-Communications Inc.**'s John C. Malone boldly pledging that his company is interested enough in the marriage of multimedia and cable television that they would buy 14.5 million units of the first manufacturer to provide a "magic box" for $350 or less. Along these lines, **Microsoft** demonstrated the *Smart TV* interface that they are developing.

It was sobering to hear Evans talking about this industry celebrating sales of 5,000 units on a CD-ROM title in comparison with *TV Guide*'s millions of readers, and to compare Philips' proud announcement of 100,000 unit worldwide penetration with Malone's desire to place millions of pieces of hardware in the homes of cable subscribers. It was almost black comedy to hear entertainment veteran Barry Diller (formerly of both **Paramount Pictures** and **Fox Television**, currently the chief executive of the **QVC** shopping network) questioning the wisdom of anyone trying to sell an $800 box. In all fairness, Diller apologized immediately thereafter, observing that there were at least two companies in the audience trying to capture people's imagination with an $800 box. Yet, he didn't believe that interactive entertainment would become a mass media phenomenon until a magic box with new uses and a compelling reason to buy was available to consumers without effort (i.e. when it was installed as part of the cable system for a low monthly fee).

It was inspiring to view demonstrations of possible Smart TV interfaces and hopeful to hear honest discussions of the barriers to converting from an analog (the present broadcasting media) to a digital world. It was exciting to hear proven entertainment magnates like Diller going one-on-one with Bill Gates of **Microsoft** and John Sculley of **Apple** in order to remind them of the minimalist interface and front-end theatricality which would be necessary in order to engender a breakthrough. It was a relief to hear substantial discussion about standardization and watch one demonstration where the same compact disc (**Compton**'s *Newsweek InterActive*) was used in a Sony MMCD, MPC, DOS-based machine with CD-ROM and Windows-mediated machine with CD-ROM and hear people like Sony's Dr. Toshi T. Doi commit their companies to further inroads in standardization.

Common Sense about Multi-Media

One would certainly expect a top executive in Rupert Murdoch's global media empire to understand the underlying philosophy and the business of retailing media. As the keynote speaker for the conference, John B. Evans (Director of Development for Murdoch's NEWS Electronic Data division) was the ideal speaker and certainly knew his audience. "Did everybody sign the non-disclosure agreement? It's the usual way these things start. If you really want to get the word out, you've got to make people sign non-disclosures. Otherwise, they don't tell anyone."

He blended fascinating insights with scintillating analogies. For example, he observed that just as the Ice Age did not occur overnight, "The Information Age has been here long enough that publishers are just beginning to notice that it's getting a bit chilly."

His thesis was that convergence, the coming together of traditional media and interactive media, is "very threatening to media."

He described the traditional media as being an overweight, drowsing organization that must "become digital, narrowcast and interactive." The major problem as he sees it is how to get the couch potatoes to get up off their rear ends and take an active role in the interactive side of the information age. He wondered if the couch potatoes are going to be smashed by the invasion of huge amounts of information or fried by the electronic gadgetry" or not. Yet, he hypothesized that, since the amount of information which is already available is overwhelming, the secret will be the introduction of customizable filters — dumb filters — in the form of "software that can fetch." In other words, putting the "Me" in media.

In Evans' vision of interactivity, connectivity will no longer be demographically related according to who or what one is, but more "cybergraphically" related ("How do you feel?" or "What are you interested in, now?"). Finally, he suggested that the reason multimedia is currently having trouble is because engineers tend to think in linear, logical paths, while the creative process is tempestuous, chaotic and confusing. The goal is to bring the creative process to the tools, turning readers into editors. When the couch potato can use voice recognition to say, "Get me this," the age of interactivity will truly have arrived.

Barriers and Breakthroughs

Several barriers still exist to seeing the vision of multi-media reach its full potential. Fortunately, several companies made announcements at intermedia which indicated that they were attempting to breach these barriers. Though the installed base of CD-ROM drives is still relatively low, Robert van Eijk, product manager of CD-ROM for Laser Magnetic Storage (a wholly-owned subsidiary of North American Philips) announced that they expect the installed base of their CD-ROM drives to reach 15 million units in 1996 (up from the current estimate of 600,000 units). They also announced two new drives that will both conform to the MPC standard and be compatible with Eastman Kodak's photo-CD format (the CM 215 and CM206), both retailing for under $500.

Another problem faced by multi-media is the multiplicity of formats. We were impressed when Dataware unveiled one authoring station that supported DOS, Windows, Macintosh, Unix, Sony's MMCD, and Japan's DOS-V and NEC-PC formats. A similar solution to the multiplicity problem was introduced by Mammoth Micro Productions. The company unveiled XA-Streaming, providing a software solution for using the same disc over a multitude of platforms.

Another criticism of multi-media has been its limited video capabilities. Hence, John Hawkins of Philips introduced the new CD-I upgrade with total full-motion video. The upgrade cartridge will provide additional memory and full-screen full motion video. It is fully compatible with existing CD-I systems, increases the memory efficiency of existing units by 30%, allows film replay from existing 5" discs and allows CD-I the capacity to publish high-speed video games. Note: Currently CD-I's installed base worldwide is only 100,000 units (with roughly half of those in the U.S.) and the company expects to double that base by this time next year.

In the more mainstream CD-ROM world, Mediavision unveiled their Captain Crunch video card. The nifty fact for gamers is that this card will enable them to play back video at 30 frames per second at regular CD-ROM data rates. By the end of the year, Mediavision expects to have these add-in boards for under $300 street price.

Portability is another issue faced by CD-ROM users. Apple Computer managed to address this issue by introducing the AppleDesign Power CD, a unit which allows users to access Macintosh CDs, EK's Photo-CD and regular audio CDs. They also introduced the AppleDesign Power Speakers to assist users who want a complete multi-media experience on the run.

Bradbury and Bandwidth

One session at intermedia made it clear that Ray Bradbury's vision of interactive television directed by a viewer at home (a minor scene in Fahrenheit 451) may not be very far away. This panel brought together John Scully of **Apple**, Bill Gates of **Microsoft**, John Malone of **Tele-Communications, Inc.**, and Barry Diller of the **Quality Value Channel** together on the same panel. Diller insisted that "interactive" is an unfriendly word. Control, as in remote control, is the issue and any interactive service must allow people to point the controller and say, "Yes." Anything else will be unsatisfying. John Scully contended that any successful interactive experience would have to include lots of personal choices. "People will gravitate to what they are interested in. We are creating an entirely new level of enabling technology that will create a lot of new industries."

Both Malone and Diller, coming from the television industry perspective, lectured the assembled technocrats that information alone is not enough to get people excited about interactive possibilities. "If you want big numbers," stated Malone, "you've got to emphasize the entertainment bias." Diller seconded the notion by observing, "You've got to theatricalize!"

Questioned about the value of CD-ROM in a world with a data highway for its infrastructure, Bill Gates responded that "CD-ROM is leading users and developers into learning how to use what is going to be available." Asked how **Microsoft** fit into the futuristic vision of information, education and entertainment on demand, Gates denied that Microsoft had plans to own television networks or cable systems. "The great success of Microsoft was making ourselves dependent and working in partnership with lots of people. We're not going to own cable stations, networks, etc. We'll keep delivering software and protocols — interface and system software. We have more people building this software than anybody else. We'll figure out a way to make money.

John Scully responded to a question concerning the future of education by stating that "The school where you go to learn facts is going to come to an end." He believes that teachers will become coaches who teach pupils how to data surf (skim through tons of information) and find information without being overwhelmed. The emphasis will be on learning to think and research, not just repeat facts. Diller concurred with Scully's belief that education will undergo a fundamental shift, but insisted that the social experience of the school has to stay. The question is, will it be a total on-line experience or a partial on-line/partial off-line socializing experience?

intermedia or Intermediate Technology

For years, the technological community has prophesied that CD-ROM and multi-media are "the next big thing" that society always seems to be seeking. Now, the same prognosticators are saying that these technologies are basic tools for building this ultimate infrastructure. For gamers, the message is a mixed bag. It indicates that connective games with broader bandwidth (better sound, video and response times) are closer than ever. Yet, the largely unsatisfying fulfilment of the old CD-ROM promises lead them to hold their expectations in reserve. We'll have to wait and see if the potential connective games of the new technology can ever live up to their potential. Thus far, we cannot say this about CD-ROM games. Time will tell concerning the data highway. **CSW**

TOP AD WINNERS ANNOUNCED

You people are sick. That's all we can make of it. Each January *Computer Gaming World* turns to you, our readers, and asks you to pick the Top Ads. Two years ago you picked SSI's *Eye of the Beholder "You Are There"* as the best full-page ad in the January 1991 issue. The next year you continued your love affair with the gruesome and grotesque by pegging SSI's *Eye of the Beholder II* "Bigger...Better...Meaner than Ever" as the best. SSI gives us Undead times two and you eat it up.

So it should be no surprise that you again have gravitated to the macabre with your selection of Bethesda's *The Terminator 2029 "Prepare For The Future"* as the top full page ad in the 1993 *CGW* Top Ad contest (183 points). The terminator's evil grin and laser beam eyes stopped you in your page-turning tracks. Never let it be said that *CGW* readers are afraid to face death. We laugh at death, we play with death, we beat death's pants off, hah!

Close behind Bethesda is **Electronic Arts'** two page spread for *Populous II "Back with a Vengeance"* (169 points), and **Nova Logic's** *Maximum Overkill "Tear into a New Reality"* (161 points).

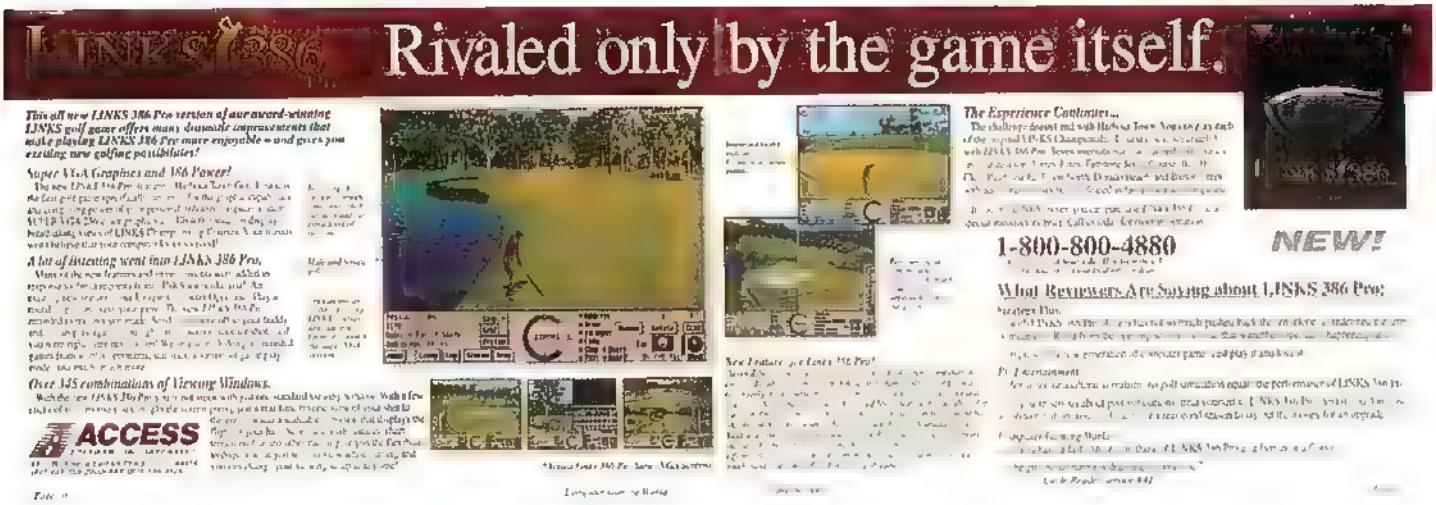
The top partial page ad goes to **Access Software** for its *Links 386 Pro "Rivaled only by the game itself"* half-page spread (308 points). Taking second is **Microleague Sports** for its half-page spread *"For New Excitement, The Name of the Game is Microleague"* (233 points).

Thrustmaster's *Flight Control System* ad garners third place honors with 214 points.

Gene Monroe of Tampa, FL, and Andrew Stein of Seattle, WA, are the co-winners of this year's contest. The two came the closest to picking the actual winners and will split the $250 cash prize, as well as receive life-time subscriptions to *CGW*. Congratulations to all the winners!

1991 Top Ad Winner

1992 Top Ad Winner



CYBERRACE
CYBERDREAMS
CyberRace • A Revolutionary 3D Combat and Racing Simulation Designed by World-Famous Futurist
Syd Mead, Whose Design Credits Include Blade Runner, Tron, 2010, and Star Trek: The Motion Picture.
Available for the IBM PC and Compatibles (August 1993), Commodore Amiga (March 1994) and Apple Macintosh
For further information please contact: North America (818) 348-3711 • Europe (071) 228-3267 (U.K.)

The world of shareware

Edutainment 101

by Chuck Miller

The word "edutainment" was coined to describe a new breed of educational software; products that effectively combined education and entertainment in a single package. While the idea in software design may seem rather new, educators have employed it in the classroom for centuries. It is, in fact, no surprise that learning can be increased by making the process more entertaining and enjoyable for the learner.

Though educational programs have traditionally been relegated to the commercial market (very little has appeared in the shareware channel), more programs are finally starting to arrive from the creative minds of shareware authors. This month we'll look at three recent titles for MS-DOS compatibles: *Word Blazer*, *Word Rescue* and *Math Rescue*.

I'd Like a Word with You

Word Blazer by **Multitask Software Systems** is a digital derivation of the traditional crossword puzzle. As the first release in The Family Word Puzzle Game Series, *Word Blazer* is a simple offering, providing the player with an enjoyable gaming experience while unobtrusively helping him or her with spelling and observation skills. Of course, the devoted word wrangler will find it especially appealing.

Word Blazer

Word Blazer contains over 150 original crossword puzzles covering a variety of subjects from words beginning with the letter "D" to words describing "things to wear." As with the traditional game, the player is presented with a puzzle from which he or she must locate all the words in a corresponding list. When a word is located, the player highlights each letter of the word (with the mouse pointer) and selects the Check button. If the word is correct, it will stay highlighted on the crossword grid and will appear highlighted on the word list. If incorrect, the letters revert to their original state. Successfully completing a puzzle rewards the player with an animated fireworks display.

Several options are at the player's disposal. Puzzles need not be finished in one sitting, as those in progress may be saved for completion at a later time. Some basic hints are available for each puzzle, as well. And, a Clock option is provided for timed play. In addition, if one would like to take a puzzle away from the computer, a copy can be sent to the printer. The only drawback is that each puzzle must be printed individually and one copy at a time.

If *Word Blazer* is weak in any one area, it is presentation. Sound support is limited to PC speaker bleeps. Graphics, though VGA and SVGA are supported, are simple line drawings and fills. With the visual and audible quality offered in the newer commercial products, I hope that Version 2.0 of *Word Blazer* is upgraded in this regard.

While more of a mental diversion than a true edutainment title, *Word Blazer* is still a worthy steed to add to one's stable of workhorse education programs (the first add-on volume, *Arts & Entertainment Pack*, should be available as you read this). However, younger players will want to keep a dictionary nearby for definition hunting with some of the more difficult words encountered during play.

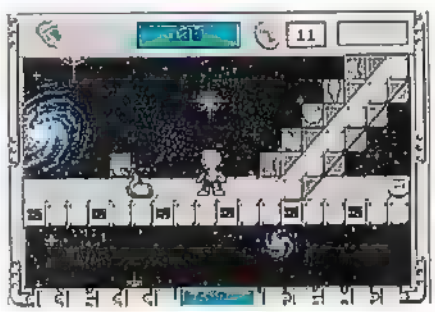
Word Blazer requires an MS-DOS compatible system with 640K RAM, a Microsoft compatible mouse, a hard drive with 4MB of free space and a color monitor (SVGA, VGA, EGA). Registration is $49.99 (a little high given the quality of its presentation) plus $3.50 shipping and handling. A sample diskette is also available for $5.00. To place your order or for additional information, contact:

$5.00 Sample Diskette
Multitask Software Systems
237 West Spruce Street
East Rochester, NY 14445
(800) 836-4721

Apogee to the Rescue!

The name **Apogee Software** is not new to readers of this column, as several of their releases have been featured in the past. Now, with edutainment in mind, we turn to two of Apogee's latest releases: *Word Rescue* and *Math Rescue*.

In *Word Rescue* [IBMPC RT #27849], the player must assist Benny Bookworm in undoing the dastardly deeds of the mean, old Gruzzles. It seems that the Gruzzles, who can't read, have been stealing words from all the books in the land so that others can't learn to read either. The player must help Benny by matching up each word with its appropriate picture so that he can get them back into the books where they belong.

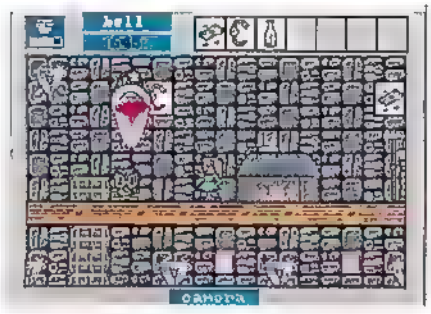


Math Rescue

Math Rescue [IBMPC RT #30766] is similar in story. This time, however, the Gruzzles are out after numbers. Benny, who is now a butterfly, again needs the player's help. This time, one must restore all the missing numbers to their rightful places (the Gruzzles have been taking them from traffic signs, paychecks and telephones, creating quite a stir), having one's mathematic skills of addition, subtraction and mixed questions tested in the process.

Those familiar with Apogee's *Commander Keen* will find *Word Rescue* and *Math Rescue* to have similar environments. Both feature three different episodes (the first being shareware) and are horizontal and vertical, side-scrolling games with hand-eye coordination being important to play. And, like *Commander Keen*, action is of a nonviolent nature. Items are collected and opponents are "slimed." However,

no one or thing is visibly destroyed or mutilated (while the player's character can "die," it is handled in a "lifted-gently-up-to-heaven" fashion). This makes both titles excellent choices for younger children.



Word Rescue

Word Rescue and *Math Rescue* are designed with youngsters in mind (though us older "kids" will still find them entertaining). Difficulty is adjustable to one of three levels: Easy (ages 4-7), Normal (ages 7-10) and Hard (ages 10-up), making the games great for families with children spanning a large age bracket

In presentation, *Word Rescue* and *Math Rescue* are a step ahead of *Word Blazer*. While still EGA in mode (come on, Apogee, get with the VGA!), the graphics are more detailed and more attractive in appearance than those of the latter title. Music and sound effects, however, are excellent and add immensely to the atmosphere of the game (requiring an Ad Lib or Sound Blaster compatible sound card). In addition, both titles have the same high level of playability and addictiveness that has become a trademark of releases from Apogee. They are difficult to quit playing — even for an adult!

Both edutainment titles will "rescue" the player from many dull hours, filling them with enjoyable learning. In fact, they are so much fun to play that one might actually forget he or she is learning in the process.

To register *Word Rescue* and *Math Rescue* and receive all three episodes, send a check or money order for $30 each, plus $4 shipping and handling to Apogee Software, or call their order number with a VISA or MasterCard in hand. Both games require an MS-DOS compatible with EGA/VGA graphics.

Apogee Software
P.O. Box 476389
Garland, TX 75047
(800) 426-3123

Red Faced Phase

We'd like to apologize for a little slip up in the May installment of this column. In the review of *Catacomb Abyss* we gave all of the design credit to **Id Software**. Actually, only partial credit goes to Id; they designed the 3-D engine used in the game. The creative credits go to **J.A.M. Productions**, a small development group headed by Jim Row and Michael Maynard. They have licensed Id's engine and plan to create a series of 3-D games for the shareware world. Their next product will be *Blakestone: Aliens of Gold*, coming to a BBS near you in July.

Send Us Your Best

If you have authored a shareware or public domain game and would like to have it considered for review in this column, please send two complete copies (preferably on 3.5" disks) with documentation and a cover letter to:

Best of the Rest
Computer Gaming World
130 Chaparral Court, Suite 260
Anaheim Hills, CA 92808. CGW

PILOTS
Our Brackets Convert Your Office Chair into a Realistic Cockpit!

Experience The F-16 with ThrustMaster Controls and Interface Dynamics Brackets

Interface Dynamics
P.O. Box 858
Wolfeboro, NH 03894
COD Orders Call
603-569-4638

Send Check or Money Order for
$59.95 – One Armrest Bracket
$99.95 - Two Armrest Brackets
$6.00 – Postage and Handling

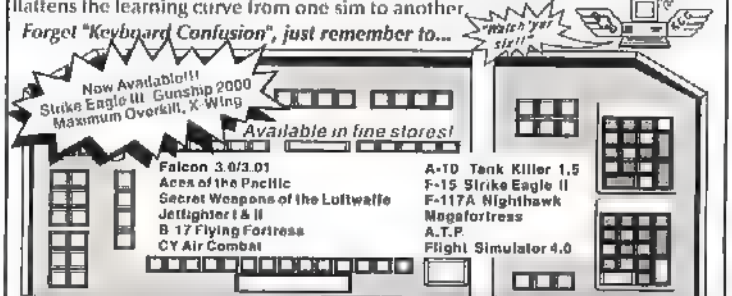
Circle Reader Service #67

KEYBOARD COMMANDER CORPS
PREMIUM TEMPLATES®

Do you enjoy "flying" the super-sophisticated PC flight simulators available today? Is "keyboard confusion" your worst enemy- you know, frantically hunting keys to switch views, activate defenses, launch weapons, etc.,(not to mention flying the plane)- just to survive the mission?

KEYBOARD COMMANDER CORPS® flight simulator keyboard templates can end that overload and let you concentrate on flyin' and shootin'. Our high-quality, color templates turn any AT101 Enh keyboard into a realistic control panel for your favorite sim and our standardized, color-coded layout flattens the learning curve from one sim to another.

Forget "Keyboard Confusion", just remember to...



★High-quality, 3-D graphics ★Standardized format
★Logical, color-coded layout ★Affixes to keyboard
★Fits all AT101 Enh. keyboards ★Sturdy, laminated stock

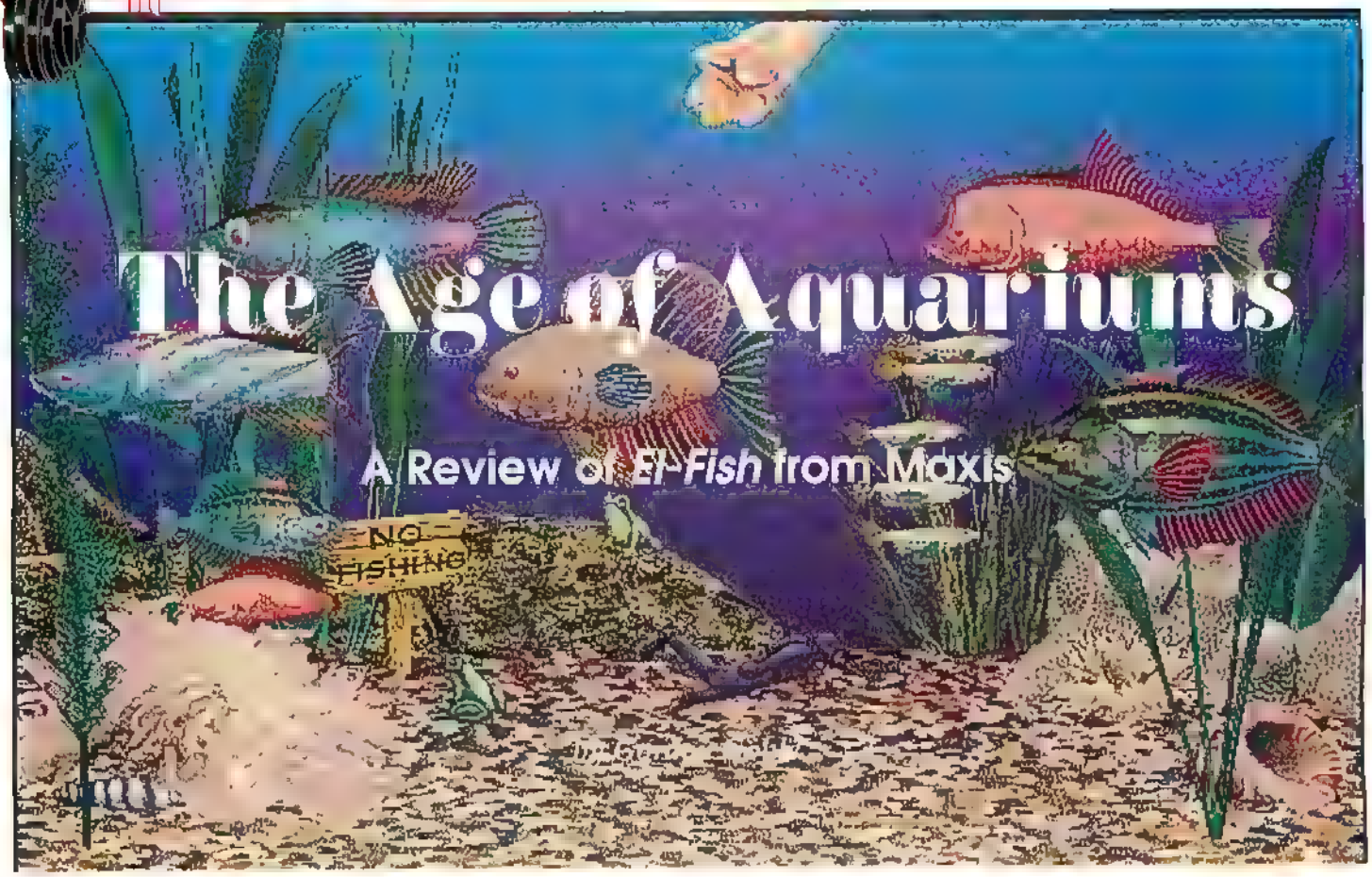
Hurry! Get 'em at Introductory Prices!!!
Please Print ☐ Check Enclosed ☐ Money Order enclosed. (Faster delivery)
Name Country
Address City
State/Province Zip/Postal Code
Items (Discounts per order only. Allow 2-4 Weeks) DEALERS WELCOME

1	$11.95
Any 2	$21.50
Any 3	$30.00
4 or more	$9.25 each

S & H add $3.00 or C.O.D. add $6.00...CALL

KCC, Inc., Dept C
4839 SW 148 Ave., #402
Davie, FL 33330
1-800-262-6066

Circle Reader Service #68



The Age of Aquariums

A Review of *El-Fish* from Maxis

Jacques: Bonjour. While I remain safely in the Calypso, Felipe has descended into the realm of the El-Fish. Felipe, can you hear me?

Felipe: Mais oui.

Jacques: Tell me of your findings

TITLE:	El-Fish, The Electronic Aquarium
SYSTEM:	IBM (386 or better with at least 4 MB RAM)
PRICE	$59.95
PROTECTION	NONE
DESIGNER	AnimaTek
PUBLISHER:	Maxis Orinda, CA (510) 254-9700

Felipe: It is so odd. El-Fish *cannot be placed into any known category. It tries to be many things, one could say camouflaging itself, yet seems to do none well. Although at times it looks indescribably beautiful, I seem to lose interest in its worth and purpose so easily. Je ne sais pas, je ne sais pas…*

Jacques: Felipe, have you bubbles in your brain? You fail to make any sense! Return to the surface immediately!

Felipe: I will bring a sample with me. You will see…

Our Cousteauic friend Felipe has stumbled upon *El-Fish*, a curious "software toy" published by Maxis, the same source of such well respected *Sims* as *-City, -Earth, and -Ant. El-Fish* is short for "Electronic Fish," as in a computer-based aquarium. Briefly, *El-Fish*ers may catch their own fish, mutate or breed them with other denizens of the deep, then produce their own aquarium-like environment in which to place their creations. Fully detailed fish will swim in a most realistic manner throughout the aquarium, while clams open and close, snails crawl, and divers dive, all accompanied by digitized tunes, and set against a scenic and colorful background of the user's making.

Sound beautiful? It is. Sound interesting? In the beginning it is, but…

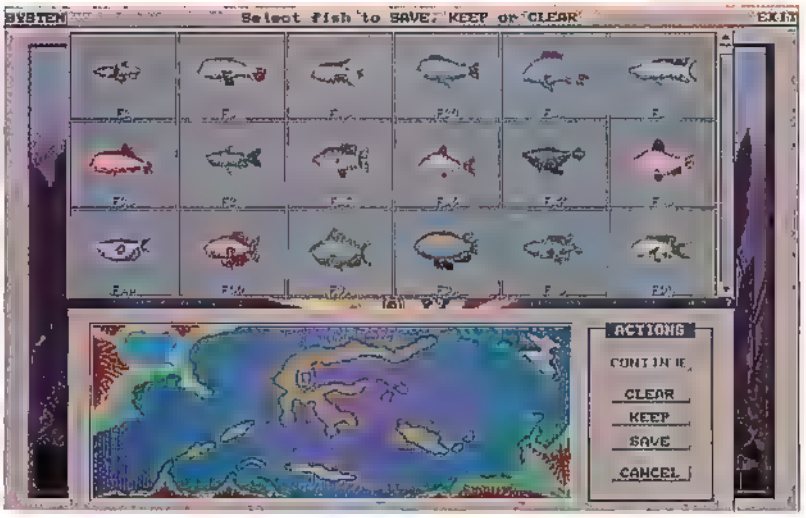
My views on *El-Fish* began to sour when I discovered I was to be robbed of eight megabytes of hard disk space by the bare bones program, plus an additional half meg for *each* new fish, and almost that much for a fully designed tank! Efficient it is not.

Entering the program, my first impulse was to view a default tank with default fish, just to discover the look of a completed product, and I was impressed — perhaps the loss of disk space was worth it after all. Running on a 486-33 machine with a high-resolution video card, my screen was transformed into one of the most beautiful aquariums I had ever seen (and this from a guy who keeps two real tanks of his own).

Pleasing scenery aside, the real stars of this aquatic show were the fish themselves. Although no shockingly mutated strains were evident in the default tank, the varieties of fish that were there frolicked and moved with graceful precision and remarkable realism. Though these fish didn't seem to have any "depth" (when a fish swims toward the viewer from the rear of the tank, it doesn't get increasingly larger), the scrolling was smooth, and each fish did exactly what fishes do in the course of their aquatic lives. I remained transfixed for several minutes, in awe of the animated graphic capabilities of personal computers in the 1990s.

The next logical step was to try my hand at the design of an original environment. Design is made possible through a handsome, menu-

driven interface, that is both conveniently and aesthetically organized. Unfortunately, it is also very slow. The first order is to develop its overall look, starting with background shading, followed by the addition of static objects, such as rocks, plants and coral. Animated objects like slow-moving snails, bubbling air tubes, and even a cat's paw that reaches into the tank on occasion are then added. Most objects can be placed at the front or rear of a tank, and the resulting sensation of depth is quite good.



Once a tank is created, it can be saved, then the actual fishies can be added and/or created. Several stock fish are ready-to-go; or, taking evolution by the hand, one can build a new model to suit one's own personal taste.

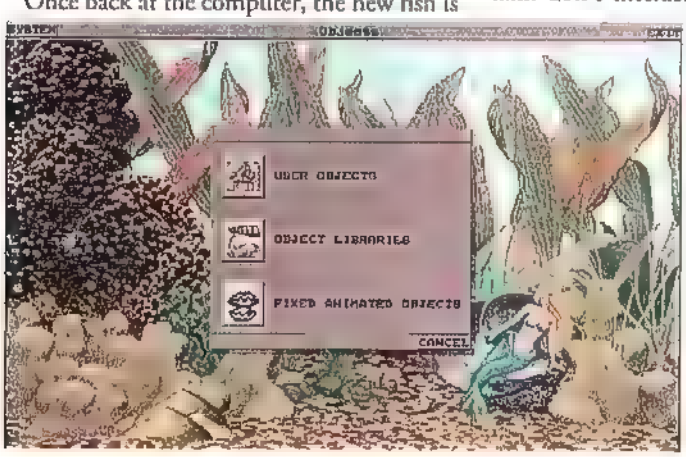
The first step in fish creation is to nab some starting specimens. Any number of our scaley friends can be fished from a small saltwater bay or freshwater lake. The captured carp can be used as they are, or transformed via "evolution" or cross-breeding into something more visually interesting. Unfortunately, this is not a situation wherein the *El-Fisher* can actually move a fin from here to there or stretch a mouth to obscene proportions — one isn't granted the sort of genetic godhood found in *SimLife*. It is more a matter of starting an invisible transformation process and hoping the program comes up with something pleasing to the eye.

When the look of a given fish is right, the fish must "learn" all of its 256 possible movements, involving a processing-intensive animation process. The animation of each fish on my 486-33 took upwards of fifteen minutes, and is definitely not a fun thing to witness for that length of time. A nice jog around the block, or a quick meal might fit in nicely at this point, just don't make it a Filet-O-Fish.

Once back at the computer, the new fish is placed into the aquarium. Clones of a single creation are allowed, and each variety will swim together in a school. When all fish are in place and are happily motoring about, the aquarium keeper can choose appropriate musical accompaniment from a small provided selection, and then sit back and relax.

That's it...and that's the problem. According to Maxis, "*El-Fish* buyers will most likely be interested in software that fully exploits the power of their system, in order to show off their computers' graphics and sound capabilities." While it's true that the *El-Fish* graphics are darn close to state-of-the-art, it's questionable as to whether there's enough substance to warrant its purchase. It would make a lovely screen saver, but it uses too much computer power to make that possible. (Actually, the manual states that it can be used as "a *very limited* screen saver." Very limited, indeed. It does not work with Windows, does not go away when you move a mouse or touch the keyboard, and you must execute it manually from DOS.) Any enjoyment stemming from the sloth-like tank and fish creation is fleeting (and becomes plain dull after a while), and the vast amount of disk space involved can be a real problem in these space-conscious times.

The biggest failure of *El-Fish* is inability to maintain the player's interest. Once an aquarium has been created and viewed, there just isn't much else happening. Objects in the tank don't interact; the optional cat's paw never snatches a fish, bigger fish don't consume smaller fish, and there is nothing along the lines of the "ecosystem maintenance" for which I had hoped.



El-Fish would have made the basis for a great simulation. Discovering the compatibility of certain fishes with others, the likelihood of certain fish eating certain plants, disease control, and so on, but these elements would steer *El-Fish* away from its "software toy" intentions and towards a full-blown game/simulation, and that was apparently not its purpose.

Maxis mentions children, desktop publishers, CAD designers, engineers and programmers as likely interested parties, but I would think that computer hardware dealers would be a more logical target. Running *El-Fish* continuously on an in-store monitor would look and sound pretty impressive, and might even induce some nice neophyte buyer into a purchase.

In this world, there are participants and there are observers. *El-Fish* is, despite the creativity involved in the development of each new environment, designed for the observer with a lot of computer time to kill. As an aquarium owner I can say that watching fish glide through a tank of water is the ultimate relaxation technique, and *El-Fish* comes about as close to digitally mimicking that experience without actually having to bail out the odd defunct fin-waggler. Unfortunately, as one who requires a bit more interaction in my computer simulations and my fish tanks, *El-Fish* didn't exactly float my boat. **CGW**

Fishy, fishy, *El-fish*...

El-Fish has an "undocumented feature" that will generate strange types of fish. The animation engine can display many sequences of binary digits, including those in text documents, spreadsheets, etc. The mutant fish below was generated by feeding the text of this article into the animation engine. To try this feature, do the following:

Change the file extension of the file you want to animate to .ROE. (.DOC files often work, but avoid .COM or .EXE. files). Copy the .ROE file to the *El-Fish* "FISH" directory. Load *El-Fish* and select "ROE" and then "RESTORE FROM." Highlight your new .ROE file and click "OK."

WARNING: If the program doesn't like your .ROE file, it may crash. Use with caution.

The Goble Guppie

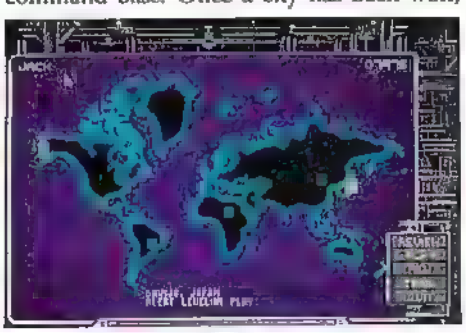
Maximum Ultrakill

Electronic Arts' *Ultrabots*

by Allen L. Greenberg

Robots are clearly a culturally diverse group of creatures. Artificial metallic beings first played a part, from time to time, in Greek and Roman mythology. The term "robot" is actually taken from a Czech word meaning "forced labor" and first appeared in a play by Karel Capek in 1921. While robots have enjoyed many celebrated international appearances in film and literature, it was in Japanese animation that the creatures were finally elevated to the gleaming gods and demons of mankind's future. Now, robotic design has once again been upgraded, this time by a race of conquerors from outer space. According to this frightening account, the earth was very nearly wiped out by the first attack wave of alien machines. Not wasting any further effort in attempting to say "Howdy!" to these unpleasant newcomers, our planet's survivors quickly began to duplicate the enemy's technology. The result was the "ultrabots," a trio of mega-robots designed to match the alien machines bolt for bolt. It is also the name the action strategy game from **Novalogic** which features the most impressive small-screen robots since "Gigantor."

Ultrabots takes place on the remains of several blasted cities of earth. The player enters each city via a central base and immediately takes control of the "situation room." The robots fighting to defend earth have already been deployed throughout the battlefield and have already been instructed to engage any nearby enemies. Likewise, enemy robots have also been deployed, several of which may be dangerously close to home base. While each city has a different set of orders and circumstances awaiting its champion, the goal in each remains the same — destroy the enemy command base. Once a city has been won,



more challenging cities then become available. *Ultrabots* features 13 such cities which must be protected.

The player is able to leap instantly to a control center for each robot in order to issue each its instructions. While it is possible to manually guide the robot through each order, most commanders will find it far more prudent to activate one of the creature's many pre-written programs. This is done by first selecting another robot or location and then selecting an instruction such as "patrol" or "engage in battle." Once instructed, the robot will proceed on its own until told to do otherwise, leaving its commander free to attend to its fellow fighters. However, a robot which has been damaged beyond the point of usefulness, or one which has run out of energy, *will* attempt to retreat on its own.

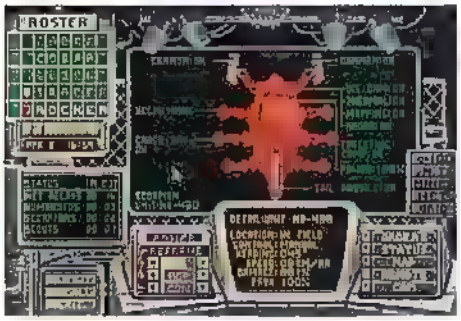
Energy for the robots is provided by a net of relay devices. The relays pass on energy from home base, and must be within a minimum distance from each other in order to stay active. One nasty way to render an army of ultrabots useless is to take out the relay nodes close to its home base. Without the net, the robots must depend on the very limited power provided by internal batteries. One of the ultrabots, the net-building "scorpion," is able to carry and deploy additional relay devices. The scorpions may also scoop up an enemy node and put it to work in their own energy net.

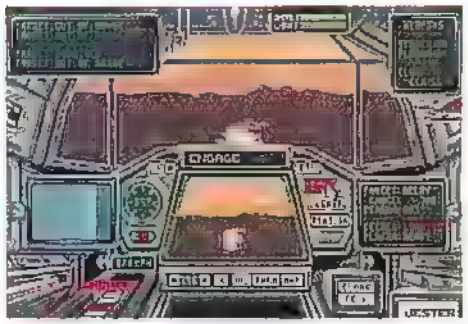
There are three varieties of ultrabot, each with its own abilities and intended use. "Humanoids" are indeed designed according to human anatomy, and are the most powerful fighters of the bunch. Equipped with some intimidating armor and weaponry, these creatures may also cause extensive damage by direct collision with another robot. "Scouts" are the runts of the litter, and are best used for reconnaissance. While their armor and weaponry are weak, they are able to move far faster than other ultrabots. For spying purposes, they may alter their height and are equipped with more extensive sensor equipment. Unfortunately, a discovered scout may be destroyed before it can move itself to safety.

"Scorpions," as mentioned above, are responsible for building the energy net. They are agonizingly slow and *not* awfully well-armored. Scorpions are, however, equipped with a useful "sting in the tail" long-distance weapon. It is most unlikely that an effective battle can be mounted away from the net. Therefore, the scorpions must be allowed to venture into unfriendly territory and they should only do so under the protective eye of their "big brother" humanoids. In addition to their unique weaponry, the ultrabots are also equipped with a variety of defenses. These include deployable mines and decoys, electronic counter measures, and an invisibility field.

A successful campaign will most often be guided from the home base or "situation

TITLE:	Ultrabots
SYSTEM:	IBM (386/16 or faster, 4Mb RAM minimum)
GRAPHICS:	VGA
PRICE:	$59.95
DESIGNER:	Novalogic
PUBLISHER:	Electronic Arts San Mateo, CA (415) 572-ARTS





room." Here, commanders will find the most useful strategic map and status display. Robots which have been damaged in the field, beyond their limited abilities for self-repair, must also return to home base for more complete therapy. Here, the player must decide how much energy to divert from the net in order to attend to these fallen soldiers. Similarly, the player may also divert energy to create more energy relay devices, although this is usually not necessary unless an abnormally large number of them have been lost or destroyed in battle. Winning a scenario requires quite a bit of robot-hopping from the home base, as no one ultrabot will be able to conquer the enemy on its own.

Each of the three ultrabots features a unique dashboard and control panel. A wide windshield glass is featured above a smaller video screen which serves several functions. The video screen connects to a camera which can pan side to side as well as zoom in on specific targets. Its most valuable function, perhaps, is to display a strategic map of the area. Unfortunately, this map appears in annoyingly low resolution and fails to point out which enemy is currently attacking or even which friendly robot the player is occupying. It is on this strategic map that the player sets the robot's destination as well as its current target.

The mouse is probably the most convenient method for issuing commands to the robots, although the joystick or keyboard may also be used. This is accomplished by placing the cursor directly over, and then clicking on, one of the control panel's many switches or buttons. The interior of the robots are drawn in exceptional three-dimensional detail, as are the robots which appear outside the windshield screen. A variety of sound effects, some of which resemble an angry neighbor pounding at the door, also enhance the action. *Ultrabots* features the most impressive robot-battle graphics ever seen. However, they lack the depth and realism of those used in Novalogic's helicopter battle simulation, *Comanche: Maximum Overkill.*

Some of the battles take place at night, during which the robot's commander will have to rely on the video camera's thermal detection system and strategic map. Each robot is also equipped with a radar system. Other features include an automatic log function which saves a player's progress upon exiting the game. There are three levels of training which the player may experience before attempting to battle in one of the cities. The instruction manual is complete, although perhaps a bit confusing in several places. Exactly what the game's bi-level, hinged package is supposed to represent remains, perhaps, the most confusing mystery of all.

Ultrabots' intense graphics may confuse some purchasers by seeming to promise arcade action rather than a challenging strategy exercise. Nonetheless, the substitution of *Ultrabots'* close up grittiness for the orderliness of a more traditional strategy game still makes it a very novel and worthwhile experience. As to whether the robots are pleased with this new addition to their cultural heritage, they are not saying. Perhaps the ability to review their own software will appear in their next major upgrade. CGW

COMPUTER
SPORTS GAMES
IBM • APPLE II • C-64

THE MOST REALISTIC STRATEGY/SIMULATION COMPUTER GAMES ON THE MARKET TODAY!

FULL COUNT BASEBALL
You manage all 26 most recent teams and 52 great past teams • 45 man roster • Stats compiler • Complete boxscore to screen/ printer • Input your own teams, draft or trade players • Wind/Weather Option • You choose starting line-up, batting order, bunt for a hit, steal, DH option and much, much more!

BASKETBALL - THE PRO GAME
You're the coach and you choose line-ups, shot selection, style of play and much more • Stats compiler • Full team and individual player stats kept for up to an 82 game schedule • All players rated by actual statistics and tendencies • 27 current teams and over 190 great teams from the past included!

ORDER TODAY! Mail check or money order for $39.95 each for Apple II and C-64 or $49.95 for IBM. You may call in and order with VISA or Master Card.
Please add $3.00 for shipping and handling.
For more information, call or write for a free brochure.

©LANCE HAFFNER GAMES
P.O. BOX 100594 • NASHVILLE, TN 37224 615/366-8088
1-800-477-7032

Circle Reader Service #70

SIDELINE SOFTWARE
ORDERS ONLY! 1-800-888-9273
Your European PC Connection

NEW TITLES	TYPE	$
A 320 Airbus	Flight Sim.	45
Amberstar	RPG	45
Battle Toads	Arcade	40
Cohort 2	Strategy Sim.	40
Daemonsgate	RPG	45
History Line 1914-1918	Strategy Sim	45
Ishar: Legend of the Fortress	RPG	45
Nigel Mansell's Grand Prix	Racing Sim.	40
Reach for the Skies	Flight Sim	45
Shadow Worlds	RPG Strategy	40
Sleepwalker	Arcade Strategy	45
Space Crusade	RPG Strategy	45
Street Fighter 2	Arcade	40
Tornado Flight Simulator	Flight Sim	45
Transarctica	Strategy Sim.	45
Vikings	Strategy	40
WWF T2, The Simpsons	ALL THREE for only	45
World Wrestle Federation 2	Simulation	40
Zool	Arcade	38

EUROMAGS
Get the latest news on the best PC titles from Europe! These high gloss full color magazines also feature a demo packed playable cover disk with each issue!
PC Format, PC Review, PC Zone, or PC Plus, each only $10

SHIPPING (UPS Ground) For up to 3 pieces, by payment: Mastercard & Visa $5.00 - C.O.D. (Cash Only) $10.00
Next day & second day air available! Call for prices on special shipping. Shipping times not guaranteed. Price & Availability subject to change! No refunds or exchanges. Defective products exchanged with same item. Products warrantied through Sideline.
FAX ORDERS CALL (305) 491-6134
Need Info? Call (305) 491 9519 Dealer Inquiries Invited!
840 N.W. 57th Court, Ft. Lauderdale, FL 33309

DON'T MISS THESE DISCOUNT DEALS !

4-D Sports Boxing	18.95	Armor Alley	16.95
A Train	26.95	Austerlitz	16.95
Advanced Destroyer Sim	16.95	Backgammon PC	14.95

DISCOUNT TITLES

Bard's Tale 3	18.95
BAT	14.95
Battlechess	18.95
Battletech 2	16.95
Bloodwych	16.95
Centurion	18.95
Colorado	14.95
Collussus Bridge 4	16.95
Command HQ	18.95
Conan the Cimmerian	18.95
Conflict: Europe	14.95
Crisis in the Kremlin	21.95
Defender of the Crown	16.95
Deluxe Strip Poker	15.95
Drakkhan	18.95
Elvira 2	18.95
F16 Falcon	19.95
Fire Team 2200	16.95
Five Treasure of Tracor	21.95
Flight of the Intruder	18.95
Floor 13	18.95
Fool's Errand	16.95
Greg Norman Golf	18.95
Heart of China	18.95
Hero's Quest	18.95
Hills Street Blues	18.95
Hoverforce	14.95
Imperium	18.95
Jack Nicholas Greatest 18	16.95
Killing Cloud	16.95
King of Chicago	14.95
Mig 29 Fulcrum	18.95
Monty Python	16.95
Panza Kick Boxing	18.95
Paperboy 2	16.95
Pit Fighter	18.95
Populous /Promised Lands	24.95
Quest and Glory	19.95
RBI Baseball 2	14.95
Realms	18.95
Rocke. Ranger	16.95
Sands of Fire	13.95
Sargon 5	18.95
Shadowlands	18.95
Shanghai 2	18.95
Shuffletuck Cafe	14.95
Sim City	16.95
Sleeping Gods Lie	16.95
Spell Casting 101	18.95
Spot	16.95
Star Saga Two	14.95
Strike Fleet	19.95
Stunt Car Racer	16.95
Super Off Road	16.95
Super Space Invaders	16.95
Test Drive 2 + all data disks	18.95
Three Stooges	16.95
TV Sports Baseball	21.95
TV Sports Boxing	18.95
TV Sports Football	14.95
Trump Castle 2	18.95
Winter Super Sports '92	16.95
Wolfpack	18.95
World Class Leaderboard	14.95

Circle Reader Service #88

MISSION CONTROL • 800-999-7995

Summer Sales Bonanza!

The Original Multi-Media PC Sound Standard! Includes Grolliers Encyclopedia on CD Rom!

The SoundBlaster Pro Deluxe adds the powerful dimension of stereo sound, CD ROM interface and a multimedia mixer to all the great features of the original SoundBlaster!

SoundBlaster Pro Deluxe.....$130.

SoundBlaster 16 ASP.....$240.

IBM DISKS

4-D Boxing 20
A-Train 42
A-Train Construction Set 25
A.T.P., Flight Commander 37
Aces of the Pacific 47
Aces WW2 1946 Disk 1 22
Aces over Europe 47
Action Sports Soccer 27
Air Force Commander 37
Air Traffic Controller 37
Air Warrior 37
Airbucks 37
Airfoil & Adventure Factory 32

Virtual Pilot puts the power right under your thumbs, gives you advanced aileron and elevator trim controls and extra throttle control for high-powered games.

CH Products..$59.

Aircraft/Scenery Designer 37
Airport & Facilities Directory 20
Aggebiaster Plus 32
Alone in the Dark 37
Alphabet Blocks 32
Amarillo Slim's Choice 22
Amazon 39
Ambush at Sorinor 40
American Gladiators 27
Andretti's Racing Challenge 20
Animation Studio 79
Animation Studio/Windows 79
Armored Fist 33
Banff Springs 22
BannerMania 25
Bart Simpson's Arcade Game 32
Bart Simp House Weirdnss 32
Batman Returns 43
Battles of Destiny 37
Beat the House 32
Beauty & The Beast Print Kit 17
Betrayal at Krondor 43
Black Crypt 33
Breach 2 22
Bridge 7.0 32
Caesar 37
California Scenery Collection 37
Car & Driver 40
Carrier Strike 43
Carriers at War 43
Carriers at War Construct Kit 37
Castle of Dr. Brain VGA 32
Challenge Ancient Empire 32
Challenge of the 5 Realms 42
Champions 37
Chemistry Works 43
Chess Maniac 5 PC 43
Children's Writing Pub Center 42
Civilization 47
Civilization Master Player's 47
Classic 5 32
Clueless 32
Coaster 27
Cobra Mission 47
Comanche: Maximum Overkill 47
Comanche Mission Disk 1 28
Combat Classics 32
Command HQ Classic 22
Conquered Kingdoms 37
Conquest of Japan 37
Creepers 32
Cuckoo Zoo 33
Cyber Empires 33
Daemonsgate 37
Dagger of Amon Ra 43
Dark Lands 42
Dark Queen of Krynn 33
Dark Sun: Shattered Lands 50
Darksend 43
Daughter of Serpents 33
Deja Vu I & II Casebook of Ace Harding 33
Design Your Home: Interiors 37
Design YourHome:Architecture 37
Design Own Home Landscape 37
Design Your Own Railroad 37
Discovery Software Pack Dual 43
Discovery:Steps of Columbus 37
Dvorak on Typing 32
Eagle Eye Mysteries 33
EarthQuest 37
Eco-Quest 2 32
Eco-Saurus 27
El Fish 37
Elvira 2:Jaws of Cerberus 43
Empire Deluxe 37
Eric the Unready 37
Falcon 3.0 47
Falcon 3.0 Fighting Tiger 27
Family Fun Pack 32
Femme Fatale 25
Final Conflict 14
Fisher Price Combo Pak 22
Fisher Price: The Farm 22
Fisher Price: Neighborhood 22
Fisher Price:Picture Dictionary 27
Flight 685 20
Flight 701 20
Flight of the Intruder 37
Freddy Pharkas 43
Frederick Pohl's, Gateway 37
Front Page Sports: Football 43
FS-Pro 27
Game Maker 59
Gary Grigsby's Pacific War 39
Gemfire 32
Global Conquest 37
Global Effect 33
Gods 27
Grammar Gremlins 32
Grand Slam Bridge 2 33
Graphic Library Party Edition 25
Graphic Library Sampler 25
Graphics Library School Bus 25
Gunship 2000 Scenario Disk 27
Guy Spy 32
Hardball 3 37
Hardball 3 Stadium Disk 19
Hardball Players Disk 19
Harpoon 29
Harpoon Challenger Pak 50
Harpoon Chall SIGNATURE 52
Harpoon Designer Series 33
Harrier Assault 37
Hawaii Scenery Disk 22
Headline Harry VGA 37
Heart of China VGA 37
Heaven and Earth 32
Hockey League Simulator 2 30
Home Alone 2 Lost in N.Y. 30
Hong Kong Mahjong Pro 33
Hoyle's Book of Games 3 32
Hoyles Classic Card 32
Inca 42
Incredible Machine 32
Ishido Pack 34
Island of Dr. Brain VGA 32
Jack Nicklaus Signature Edi 43
Jack Nicklaus Tour Disk 2 20
Jack Nicklaus' Unlimited Golf 37
Jeopardy 25th Anniversary 14
Jeopardy Tri Pack 19
Jimmy Connors Pro Tennis 34
John Madden's Football 22
Jordan In Flight 39
Jump Jet 43
K.G.B 22
Kid Pix 37
Kid Pix Companion 27
Kid Works 32
Kid Works 2 37
King's Quest 6 VGA 47
Legends of Valor 40
Leisure Suit Larry 5 VGA 27
LHX Attack Chopper 20
Liberty or Death 37
Life & Death II The Brain 32
Links 386 Pro 39
Lord of the Rings 2 37
Lost Admiral 37
Lost Files of Sherlock Holmes 47
Lost in L.A. 37
Lost Treasures of Infocom 43
Lost Treasures of Infocom 2 32
Lunar Command 37
Magic Candle 3 40
Magic Candle II 39
Magic Spells 27
Mantis: Experimental Fighter 43
Mario is Missing 32
Mario Teaches Typing 27
Math & Me 22
Math Blaster Mystery 32
Math Blaster Plus 32
Math Rabbit 27
Megafortress Mission Disk 2 27
Megafortress Flight Old Dog 28
Megafomania 32
Mercenaries 40
Mickey's 123 2.0 22
Mickey's ABC's 2.0 22
Mickey's Word Adventures 27
MicroLeague Ultimate Cards 27
Might Magic 4 Clouds Xeen 43

Rated #1 Readers Choice Winner 1992 The FlightStick is designed to look and feel precisely like a real jet joystick. Its ergo dynamic design and precision engineering help you shoot faster and score higher. Its tough construction makes it the last joystick you'll ever buy!

CH Products $39.

Might & Magic III 40
Mike Ditka Football 35
MLBPA 1992 Players Disk 17
Naval Battles:America Atlantic 22
Naval Battles Scenario Builder 22
New Print Shop 36
New Print Shop Companion 32
Powerhits, Movies 32
Powermonger 33
Prince of Persia 27
Print Shop Sampler/Windows 30
Print Shop Windows/Business 30
PrintShop Deluxe Windows 47
Prophecy 27
Prophecy of the Shadow 40
Protostar 43
Putt Putt Joins the Parade 33
Putt Putt's Fun Pack 33
Quest for Glory III 39
Race Drivin 37
Rages to Riches 37
Railroad Tycoon Classic 22
Rampart 29
Reach for the Stars 25
Read N' Roll VGA 32
Reading & Me 27
Reading Adventures in Oz 37
Red Baron VGA 39
Red Baron Mission Builder 22
Red Storm Rising 39
Rendezvous A.D. 2115 22
Riders of Rohan 32
SeaWolf 37
Sea of the Dragon VGA 38
Search A Trail 37
Robo Sport Windows 29
Romance of Three Kingdoms 2 43
Rules 37
Rules of Engagement 2 40
Scenery Collection Set A 37
Scenery Collection Set B 37
Scenery Enhancement Editor 27
Scenery Bundle Tropics Rocks 37
Scenery Grand Canyon 22
Scenery Upgrade Tahiti 22
Scenery Upgrade Tokyo Japan 22
Scooter's Magic Castle 33
Scrabble Deluxe 27
Scrabble Deluxe Windows 30
Seal Team 40
Search for the King 27

Not a Clone! Genuine Soundblaster chipset means 100% SoundBlaster compatability. Includes High Performance Speakers, An Ergonomically Designed Joystick & Gameport. Software includes Voxkit Voice Utilities, Talking Parrot, FM Intelligent Organ, Jukebox for Windows 3.1 & Castle Wolfenstein.

By Soundwave.....$99.

MIT 32
NFL Full Motion Video 47
Ninja Garden 2 27
Ninja Turtles Arcade Game 32
Ninja Turtles Manhattan 32
Nobunaga's Ambition II 37
Number Munchers 22
Office Design 14
Operation Neptune 37
Out of This World 37
Secret of Monkey Island II 40
Secret Weapons Exp. Disk 2 22
Secret Weapons Missions 22
Secret Weapons of Luftwaffe 44
Secret Weapons:Dornier 335 12
Secret Weapons:Heinkel 162 22
Shadow of the Sorcerer 34
Shadow President 43
Shadowlands 32
Shanghai II: Dragon's Eye 32

Weapons Control - A hands on throttle with seven independent controls including radar mode, weapons select, waypoint select and counter mesures.....$60.

Flight Control -The best joystick for Flight Simulators. Compatible with all flight simulator packages as 2 button joystick.....$60.

Flight Control Pro.....$115.

Rudder Pedals.....$115.

ACM Game Card.....$35.

P.T.O. 42
Patriot 47
Perfect General 37
Perfect Gen Greatest Battles 25
Perfect General Scenario Disk 25
PGA Tour Golf 33
Pilot's Edge Version 2.0 12
Pilot's Edge Version 3.0 12
Pilots Edge Version 1.0 12
Pilots Power Tools 27
Planet's Edge 40
Playroom 32
Police Quest 3 VGA 43
Populous 2 40
PowerGame Bundle 57
PowerHits, Battletech 32
Sharif on Bridge 32
Sharif on Bridge for Windows 32
Shuttle Space Flight 37
Silent Service 2 Classic 22
Sim Ant 37
Sim Ant Windows 37
Sim City 30
Sim City Windows 37
Sim Earth 37
Sim Earth Windows 37
Sim Farm 37
Sim Life 42
Solitaire for Windows 32
Solitaire's Journey 37
Sound, Graphics Ar Upgrade 29
Spaceward Ho! 37

Call us and use your MC, Visa or Discover

800-999-7995

International 201-677-1400

Fax 201-677-9484

Methods of Payment: We accept Visa, MC, Discover Card & Money orders. Personal checks allow 14 days to clear. School, State & City purchase orders accepted. Please send $2.00 for our Mission Control Communique 24 Page catalogue (free with order)

Shipping: UPS Ground ($5 minimum) / UPS Blue ($7minimum) APO & FPO ($7 minimum)

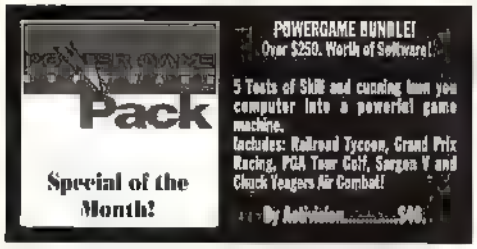
Overseas minimum $30 shipping (please fax orders)

Send money orders or checks to:

MISSION CONTROL, 561 Valley Road Suite 211
Dept. CGW703, Upper Montclair, NJ07043

Order Now 800-999-7995 - Now Available in Alaska, Hawaii, Puerto Rico & Canada!

International Order Line (201) 677-1400 Fax (201) 677-9484



SpaceWrecked 32
Spear of Destiny 37
Speed Reader II 43
Speedball 2 27
Spell It Plus 32
Spellcasting 301 37
Spellcraft:Aspects of Valor 37
SPROUT 37
Star Trek 25th Anniversary 37
Star Trek:Screen Saver 43
Stormovik 13
Strike Command Speech Pak 22
Strip Poker 3 32
Strip Poker Data Disk 1 18
Strip Poker Data Disk 2 18
Strip Poker Data Disk 3 18
Strip Poker Data Disk 4 18
Strip Poker Data Disk 5 18
Stunt Island 37
Super Jeopardy 27
Super Solver's Outnumbered 32
Super Space Invaders 27
Super Tetris Windows 32
Task Force 1942 43
Terminator 2029 43
Test Drive 35
Tetris 25
Tetris Classic 29
Tetris Classic Windows 29
The Lost Tribe 27
Theatre of War 33
Tom Landry Football 32
Tony Larussa Baseball 2 40
Tony Larussa Fantasy Draft 16
Tony Larussa II AL/NL Stad 19
Tony Larussa II Fantasy Draft 16
Tony Larussa II MLBPA 16
Tornado 47
Tracon For Windows 27
Tracon II 32
Treasure MathStorm 37
Treehouse 37
Tristan Pinball 32
Twilight 2000 VGA 37
U.S. Atlas for Windows 54
Ultima 7 Forge of Virtue 22
Ultima 7 The Serpent Isle 52
Ultima 7:The Black Gate 50
Ultima Underworld II 52
Ult Underworld Stygian Abyss 50
Ultrabots 39
V for Victory I 47
V for Victory II:Velikiye Luki 47
Victory III:Market Garden 47
Virtual Reality Studio 2.0 57
Wacky Funsters 22
Wax Works 37
Wayne Gretzky Hockey 3 37
Weaver Baseball 2 17
Wheel of Fortune Tri-Pack 20
Wheel of Fortune w/ Vanna 27
When Two Worlds War 37
Where in America's Past 37
Where in Europe Carmen 31
Where in USA Carmen Deluxe 47
Where in USA Carmen 31
Where in the World Deluxe 48
Where in the World Carmen 31
Where in Space is Carmen 50
Where in Time Carmen 31
Wing Commander & Ultima 6 48
Wing Commander Deluxe Ed 50
Wing Commander II 52
Wing CommandSpeech Pak 17
Wolfenstein 3-D 5.25 37
Word Attack Plus 32
Word Munchers 22
World Circuit Grand Prix 37
World Tour Tennis 33
X-Wing 42
Yeager's Air Combat 29
Zug's Adventures Eco-Island 24
Zug's Dinosaur World 25
Zug's Race Through Space 25
Zug's Spelling Adventures 24

ACCESSORIES

3.5 Head Cleaner 7
5 1/4" Head Cleaner 7
A-10 Avenger Template 12
A-10 Tank Killer Template 12
A.T.P. Template 12
Aces of the Pacific Template 12
B-17 Flying Fortress Template 12
Chuck Yeager Template 12
Comanche Max Overkill Temp 12
Computer Cleaning Kit 25
Computer Vaccuum Kit 19
F-117A Template 12
F-15 Strike Eagle III Template 12
Falcon 3.0 Template 12
Fax 96 by Freedom 69
Flight Simulator 4.0 Template 12
Miracle Piano Teacher 299
Strike Commander Template 12
X-Wing Template 12

SOUNDCARDS/CD

Ad Lib Gold 1000 130
Discovery CD 16 bit Bundle 499
Edutainment 16 Bundle 595
Mitsumi CD Internal Drive 239
Mitsumi w/4 CD Titles 299
Multi-Media Starter Kit 16 489
Pro Audio Spectrum 16 179
Sound Blaster 16 ASP 249
Sound Blaster Pro Deluxe 139
Sound Machine & PC Sound 99
UltraSound Board 129
ThunderBoard 99

SUMMER SALES

While Supplies Last!

A Line in the Sand	21	Legend of Kyrandia	32
A.T.A.C.	31	Lemmings 2	29
Action Station	19	Letter Works	39
Action Station Scenario	9	Lightspeed	19
Ad Lib Gold 1000	139	Maelstrom	33
An American Tail	19	Martian Dreams	40
Ancient Art of War Skies	32	Martian Memorandum	19
Auto Map	49	Math Blaster Plus Windows	32
AutoMap Windows "	49	Mavis Beacon 2 Windows	32
AutoMap: Europe	69	Mavis Beacon Typing 2.0	29
B-17 Flying Fortress	34	Mc Gee Bundle	29
Barbie's Glamorous Quest	19	MicroLeague Baseball 4	27
BattleChess 4000 SVGA	32	Mission Impossible	22
BattleChess 4000 VGA	29	Monopoly Deluxe Windows	32
Bush Buck Adventure	19	Mouse Mat	5
Business Card Maker Delxe	32	NFL Pro League Football	19
Campaign	24	No Greater Glory	29
Cashbiz	10	Oregon Trail Deluxe	23
Conquest of Longbow VGA	35	Origin FX Screen Saver	22
Crime Does Not Pay	14	Pacific Islands	24
Crusaders of Dark Savant	29	Paperboy 2	19
Dark Half	25	PC Nations	10
Dinosaur Designer	12	Personnel Readyworks	39
Dragon's Lair 3	29	Race Into Space	38
Dream House Pro	29	Rex Nebular	32
Dune 2	32	Sailing Simulator III VGA	29
Dvorak's Top 30	32	Sales Letter Works	39
Eagle Rider	14	Sea Rogue	19
Elite Plus	24	Secret Island Dr. Quandary	29
Eye of Beholder 3	37	Siege	32
Expert Pet Care	9	Silent Service II	22
F-15 Strike Eagle III	39	Space Quest 5	32
FailSafe Computer Guardian	29	Spoils of War	29
Femme Fatale	25	Storybook Weaver	29
Flight Simulator 4	39	Strike Commander	49
Flight Planner	19	Super Munchers	27
Geo Jigsaw	19	Swap	19
Great Naval Battles	39	The Humans	19
Greens: Ultimate Golf	32	Tom Landry Football	19
Gunship 2000 VGA	34	Time Treks	32
Heroes of the 357th	26	Trolls	22
Inspector Gadget	29	Trump Castle 3	32
Knights of the Sky	19	[redacted]	129
L' Empereur	29	Vaccuum Kit	19
Leather Godess Phobos 2	32	Veil of Darkness	33
Legal Letter Works	39	What's My Angle	29
Legal Letterworks	39	Zoo Keeper	32

For the Best in ADULT CD ROM. Call, write or fax Mission Control for a list of the Hottest Titles and most competitive prices. You must be 21 or over to order.

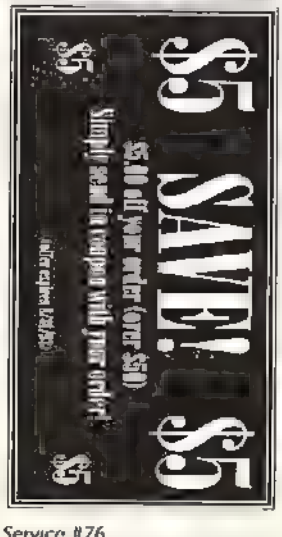
CONTROLLERS

Analog Edge 20
Analog Plus 27
Analog Pro Joystick 44
Analog Sabre 22
APS 2001 Cobra Joystick 69
Aviator Yoke 34
Eliminator Game Card 29
Flight Control Yoke 69
Flight Stick 39
FX 2000 27
Gameport Automatic MCA 48
Gameport III Automatic 34
G Force Yoke 54
Gravis Analog Joystick 39
Icontroller 40
Icontroller for Laptops 49
Intruder Joystick for 30
Mach I 19
Mach III 33
Maxximum Bundle 99
Maxximum Pedals 49
Merlin 24
Mouse Wheel 39
Mouse Yoke 34
PC Command Control 25
PC Gamepad 25
PC Joystick Combo 55
QS161 PC Pack 39
Virtual Pilot 59

THRUSTMASTER

ACM Game Card 35
Flight Control Pro 115
Flight Control System 69
Rudder Pedals 115
Weapons Control System 89

The Pilot's Edge allows you to 'program' your Thrustmaster Flight Control.
Version 1 - works with LucasFilm
Version 2 - works with MicroProse
Version 3 - works with Spectrum Holobyte.
$12. each or all three for $33.



CD ROM

7th Guest 59
Aladin and his Wonderful Lamp 33
Almanac Time Magazine CD 129
Amanda Stories CD/MPC 49
American Business Phonebook 39
American Heritage Ency Dict 64
Animals MPC 34
Arthur's Teacher Trouble 30
Audubon Mammals 39
Barney Bear Goes to Space 29
Barney Bear goes to School 29
Basics Electronic Cookbook 64
Battle Chess Enhanced 29
Beauty and the Beast 35
Bible Library 59
Bibles and Religion 29
Britannica's Family Choice CD 64
Business Master 29
C.D Rom Pack 47
CD PowerBox 32
Chess Maniac 43
ChessMaster 3000 32
Classic Book Collection 49
Clip Art Collection 29
Clip Art Galore 29
College Handbook 59
Colossal Cookbook 24
Compton's Encyclopedia w/Atlas 486 .....
Compton's Family Choice 39
Compton's Multimedia Golf Guide 3D 30
Comptons Multimedia Encyclopedia D .....
Conan the Cimmerian 27
Deathstar Arcade Battles 29
Deluxe Scrabble 37
Desert Storm 32
Dune 37
Eco-Quest 1 43
Ecstasy 69
Education Master 22
Electronic Traveler:California 33
Encyclopedia of Clip Art 34
Family Doctor 35
Family Education Collection 29
Fatty Bear's Birthday Surprise 39
Food Analyst 54
Future Wars 39
Game Master 29
Game Pack 2 35
Game Pack I 64
Gifs Galore 22
Golf Guide:California/Hawaii 37
Great Wonders of the World 39
Grolier's Encyclopedia 99
Guiness Almanac 59
I Photograph to Remember 29
Interactive Story Time 38
Jack in the Beanstalk 33
Jets & Props 45
Jones in Fast Lane 43
KGB/CIA World Factbook 40
Kings Quest V 43
Legend of Kyrandia 43
Library European & America Art 59
Lion Share 34
Local Girls 39
Loom 34
Lost Treasures of Infocom 2 47
Lost Treasures of Infocom 47
MacMillan Dictionary Children 40
Mammals:A Multimedia 44
Manhole 37
Mantis: Experimental Fighter 47
Mayo Clinic 39
Mixed up Mother Goose 30
Monster Disk (2 disk set) 49
Mother Earth 39
Multimedia Grammy Awards 44
My Private Collection 99
PC Fix Vol. 1 64
PC Fix Vol. 2 64
PC Fix Vol. 3 64
Physical Therapy 44
Power Pak Gold 34
Private Pictures Vol. 1 69
Publish-It 2.0 39
Publisher's Paradise 33
Putt Putt Joins The Parade 39
Putt Putt's Fun Pack 33
Reference Library 29
Secret of Monkey Island 29
Secret Weapons of Luftwaffe 29
Shakespeare's Complete Works 29
Shareware Heaven 29
Shareware Studio 29
Shanf on Bridge 47
Sherlock Holmes 1 39
Sherlock Holmes 2 47
Sherlock Holmes 3 47
Shuttle Flight Simulator 27
Sleeping Beauty 35
So Much Shareware 69
Software Jukebox 34
Soundworks 39
Space Quest 4 29
Star Trek 25th Anniversary 47
Storm 1 59
Storm 2 59
Storm 3 59
Summware 1993 29
Talking Classic Tales 65
Talking Schoolhouses 39
The CGA Tour:Earth Invitational 47
The Jungle Book:Kaa's Hunting 33
The Jungle Book:Mowgli's Brother 33
The White Horse Child 33
Time Table of History 59
TimeTable of Arts Entertainment 65
Timetable Sys. , Politics Media 65
Timetable of Science Innovation 65
Too Many Typefaces 19
Toolworks Reference Library 39
Twelve Roads to Gettysburg 47
U. S. Presidents 39
U.S. History 9
Ultima 1 thru 6 57
Ultima Underworld/Wing Comm 2 54
US Atlas 1.5 with AutoMap 42
US Atlas w/ Automap 57
US History 200
USA Wars: Civil War 39
Volcano 69
Where in the World is Carmen 34
Willie Beamish 29
Windoware 19
Windowmaster 32
Windows 1993 34
Ultima 6 & Wing Commander 39
Wing Commander Deluxe 54
Wing Commander 2 Deluxe 54
World & U.S. Atlas 79
World Atlas 3.0 & US 3.0 40

Mitsumi CD Rom Drive Internal 350ms with Grollers, SWOL, Chess 3000 and Family Doctor! Special Price $299.

MISSION

Art by Rodger MacGowan, Copyright 1993 RBM Graphics

COMPUTER WARGAMING WORLD

In this issue . . .

***Liberty or Death* Review**
by Tim Carter 126

Secrets of Success in *Caesar*
by Alan Emrich 130

***V for Victory: Market Garden* Review**
by John Vanore 134

Perfect General: Greatest Battles of the 20th Century
by Richard Savage . . 138

An Inspection of *Aide de Camp*
by Alan Emrich 140

***V for Victory: Velikiye Luki* Replay**
by Michael Peck . . . 143

A Vertical *Jump Jet* Review by Paul Rigby 146

Let the Games Begin

by Alan Emrich

As we head into the dog days of Summer, most wargamers seem to find more time for their hobby. This usually lasts until Fall when family obligations again come to the forefront of personal schedules. In the meantime, we should all enjoy the good campaigning weather and fight our simulated battles while the sun shines long. With many good releases in hand and rumblings of Gary Grigsby's *War in Russia*, *Warlords II* and *Command HQ II*, these, indeed, are the glory days computer wargaming. (May they continue forever....)

Tournament Deluxe

We have now reached the commencement of the grand experiment known as the Computer Gaming World / New World Computing **Empire Deluxe** tournament featuring *Empire Deluxe*. With 64 players planted firmly in place, allow me to set up our starting situation.

Answering the call to arms, *Empire Deluxe* players with modems and network access sent us e-mail indicating that they wanted to participate in this great event. At stake were several prizes, the most notable of which was the grand prize offered by New World Computing: a trip to California featuring tours of Disneyland, Universal Studios, New World Computing and Computer Gaming World magazine. While not in the same league as Publishers' Clearing House, that's not too shabby a prize for we computer strategy gamers.

The faithful have assembled on-line and, at press time, the games have begun throughout the United States (and Canada, which has a single, brave participant). Interested gamers will want to note what networks these embattled few are using to contact us and in what numbers each network is represented. This is given in the table below:

CompuServe:	23
Prodigy:	15
GEnie:	13
The Sierra Network:	6
America OnLine:	4
Internet*:	2
Delphi*:	1

* = Through the CompuServe gateway.

Next issue there will be tales to tell of battles won and lost. Even as I am preparing for the summer conventions ahead (CES, Origins and GenCon), the tournament will continue in single elimination fashion until there is but one undefeated player left standing. I'll also bring you the latest wargaming news from the Computer Game Developer's Conference. With many top wargame designers attending, there is sure to be some juicy gossip.

What follows are the match ups, given in pairs of opponents. For their computer network identification, use the first letter for each network from the previous table (i.e., T = The Sierra Network, C = CompuServe, ...).

Good luck, good sports, and may the most sound tactician win.

Name	Network	City, State
R. Rutledge	P	Seattle, WA
A. J. Hunt	G	Seattle, WA
T. Webb	P	Reno, NV
R. Olsen	P	Seattle, WA
M. Isom	P	Bremerton, WA
D. Phillips	P	Kelso, WA
K. Holland	C	Malibu, CA
C. Wright	C	Palos Verdes, CA
R. Blake	C	Lakewood, CA
M. Kohn	C	Walnut Creek, CA

Name	Network	City, State
J. Munger	C	San Diego, CA
W. Haberer	G	Tucson, AZ
M. Conder	G	Littleton, CO
B. Winkeler	A	St. Louis, MO
J. Longshore	P	Ann Arbor, MI
P. McClellan	C	Sterling Hts, MI
A. Gilbert	G	Chicago, IL
K Wenker	G	Chicago Ridge, IL
D. Aldrich	G	Minneapolis, MN
B. Pryslak	C	Ontario, Canada
L. Brown	P	??, TX
E. Best	G	Carrollton, TX
M. Clouser	G	San Angelo, TX
B. Hart	C	College Sta., TX
C. Rowlette	T	Euless, TX
M. Ellis	P	Tupelo, MS
K. Reimer	G	Radcliff, KY
C. Hartman	C	Atlanta, GA
S Palmer	C	N. Olmsted, OH
S. Guilford	G	Cleveland, OH
J. Trickey	T	Groveport, OH
R. Andrews	T	Waterville, OH
D. Etheredge	T	Cockeysville, MD
B. Hake	P	Silver Springs, MD
B. Marchesani	P	Lyndhurst, NJ
R. Wolsky	D	Cliffside Park, NJ
T. Patovic	P	Palisade Park, NJ
D. Crandell	C	??, NJ

Name	Network	City, State
J. Garvey	I	Snyder, NY
N. Bast	I	Scottsville, NY
C. Shen	T	Whitestone, NY
B. Brennan	C	College Point, NY
W. Del Prior	A	Brooklyn, NY
V. Wong	T	Bayside, NY
D. Pikelny	C	Jackson Hts., NY
J. Lesko	C	Linwood, NJ
R. Savage	P	Holliston, MA
H. Gale	G	Westwood, MA
B. Walker	C	Burlington, VT
M Gravel	C	Cranston, RI
B. Winslow	G	Lyme, CT
E. Brown	A	Burke, VA
M. Lott	C	Alexandria, VA
W. Wyant	C	Greensboro, NC
R. Moser	P	??, FL
D. Hayden	G	Tampa, Fl.
D. Hertzler	A	Sarasota, FL
B. Duval	P	Largo, Fl
E. Skerke	C	Downers Grove, IL
A. Neal	C	Mason, OH
K. Clark	C	Upland, CA
J. Bolnick	C	Los Angeles, CA
D. Scheeringa	P	Sunrise, FL
M. Carroll	C	Rocky Point, NY

The ULTIMATE Play-By-Mail Offer

FLAGSHIP magazine, with Ark Royal Games, C2 Simulations, Capitol Consulting, Deltax Gaming, Flying Buffalo Inc, Flying Dutchman Games, Graaf Simulations, Inner Dimensions, Rolling Thunder Games Inc and Twin Engine Gaming, is proud to make what may be the most exciting offer in PBM history. For $19.99, we'll give you:

(a) A 4-issue trial subscription to **FLAGSHIP**, PBM's leading international magazine, with 56 pages each issue packed with news, reviews, and uncensored player comments. Every issue includes a sheet of discount coupons worth many times the cost of the magazine.

(b) A coupon entitling you to $20 value of rules and/or turns in any of these games: **Against All Odds, Adventurer Kings, Cluster, Continental Rails, Domination, El Mythico, Feudal Lords, New Order, Quest of the Great Jewels, Shadow Lords, Sirius Command, Space Combat, Space 101, StarGlobe, Starquest, Subterrania, Victory!, World Emperor II** and **Warriors & Wizards.** You choose where you want to use the coupon: to help you, we will include an impartial description of each of them! The only condition is that you should not have played with that particular gamemaster before.

Last but not least, if you are disappointed with the first **FLAGSHIP**, let us know within one month and we'll refund you the entire $19.99 by return. No handling fee, no requirement to return anything - yes, you can still use the coupon.

To try it, send $19.99 to FLAGSHIP, CGW special offer, PO Box 6105WSS, Gainsville GA 30504

Circle Reader Service #55

Run For Your Life!

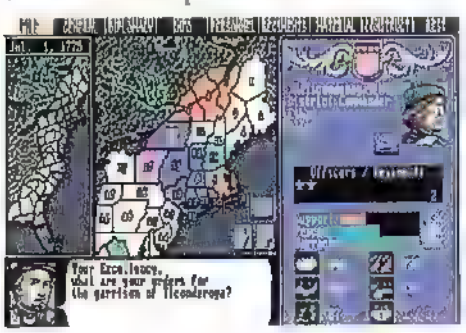
Koei's Liberty or Death

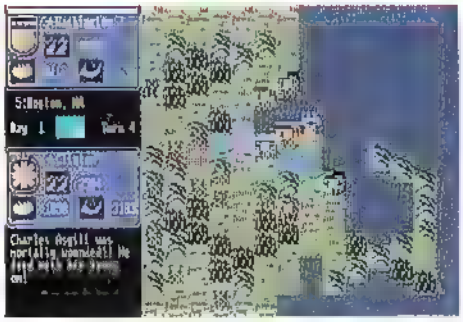
Liberty or Death, the latest strategy game from Koei, recreates the American War of Independence. Players assume the role of George Washington or William Howe, attempting to either foster a successful revolt or stop it in its tracks. Unfortunately, Koei has done little more than regurgitate the same model and interface used on all of their previous products.

This system was impressive when it was initially released with *Nobunaga's Ambition* over six years ago, however, it is now hopelessly out of date. From the EGA graphics to the weak documentation, no part of this product is anywhere near current industry standards. Furthermore, there is only one scenario and players do not have the option of a modified set up. There are no historical "what ifs" either in the setup or the occurrence of major international events.

Liberty or Death follows the same province-to-province format as all previous Koei games. Players control individual officers, each of which has a military unit attached to him. Recruiting and maintaining forces are essential elements of the game, and players must be careful to keep a balance between the size of their army and the supplies and resources available.

At certain intervals the commander in chief must report to his political masters. This involves requesting military support and delegating financial resources. The player is responsible for the conduct of the war and can be relieved if the powers that be decide that





the situation has deteriorated below acceptable levels.

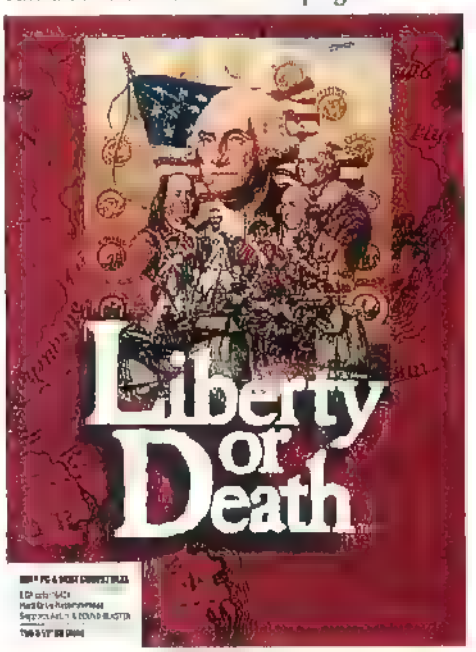
When battle is joined, players have the option of controlling individual units via a tactical screen. There are a variety of options and command choices to be made at the tactical level. Unfortunately, most of them do not make much difference to the outcome of the battle in question.

Perhaps the designers of *Liberty or Death* were attempting to simulate the frustration felt by British officers when they encountered irregular tactics from the American insurgents. The lack of simple geographical information is particularly annoying. Some provinces cannot be successfully attacked without the use of boats. This is logical and the use of boats adds an interesting strategic dimension. However, it seems strange that local commanders would not know they needed boats until they had actually invaded the province (by which time it is too late). Until players learn the peculiarities of the map they will want to save often and be prepared for multiple resets.

Ultimately, the real failing of the tactical element of this game is the inability of good commanders to gain better results than weak ones. While there are many things to do on the tactical screen, the battles are grinding attritional affairs. A good general can obtain a slight advantage through the use of terrain, however numbers will still decide the outcome of most encounters.

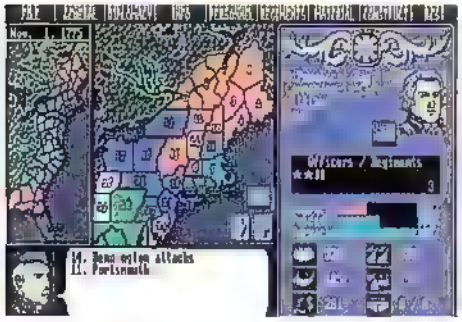
It could be argued that the lack of tactical control and the inability of the supreme commander to radically affect the outcome of a battle conducted by his subordinates is actually historically accurate. The real problem with *Liberty or Death* is that strategic command and control is not much more rewarding.

All of the political and strategic elements of a revolution are accounted for in the game. Popular support is important, and chronic shortages of men, equipment, supplies and money all greatly effect the nature of the war. However, the documentation does not explain either the individual elements or their cumulative effect on the campaign.



TITLE:	Liberty or Death
SYSTEM:	IBM
GRAPHICS:	EGA
PRICE	$59.95
PROTECTION:	None
# PLAYERS:	0-?
PUBLISHER:	Koei 1350 Bayshore Hwy #540 Burlingame, CA 94010 (415) 348-0500

For instance, while support in a particular province may be raised or lowered based upon a number of activities, there is no explanation of the overall impact of popular opinion. As well, popular opinion appears to shift for some reasons (such as a military victory) that are not elaborated upon in the manual. When this is combined with a clumsy and out-of-date interface, the construction of strategy becomes aggravating.



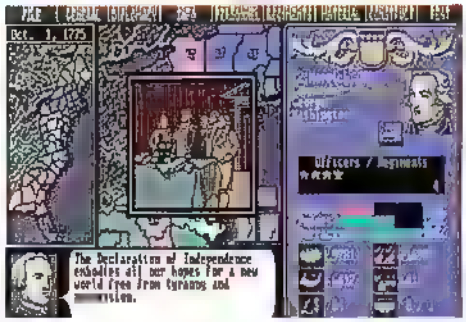
Liberty or Death feels and plays in a linear fashion. Because there are no setup options and no scenarios, players will find themselves repeating the same actions over and over again. While there are a range of strategic choices to be made, winning usually involves following the same basic steps. Once again, this was acceptable five or six years ago. In 1993 it is merely tedious.

On Avoiding "Death" (Strategy Tips)

- The British fleet is a crucial asset. As a blockading force it can strangle the rebellion while providing much needed resources to the British; as a military force its bombardment capability can turn the tide in many battles. If heavy fighting is expected, the fleet should always be used to support land actions. If the fleet has been commited to an area, try to draw the Americans into battle along the coast, where the fleet may be used against them.

- In tactical combat terrain, forts and hills can be used to minimize casualties. Entrench units wherever possible. Remember, superior numbers will usually determine the victor. A slight advantage can be gained by attacking a single enemy unit with two or more friendly units at once. Whenever possible equip engineers with cannons, as they are the only units capable of inflicting damage without suffering casualties of their own. They are also the only units which can harm the British fleet.

- Take careful note of the geography of each province. Some require boats for a successful invasion, and some, like



Montreal, are almost impossible to successfully attack if the British fleet is present.

- Remember that support is the key to victory. Although the documentation does not say so, experience and common sense suggest that the greater one's support the more food, money and soldiers will be available.

- Keeping an army in existence is also important, particularly for the Americans. The British can reinforce more quickly and with greater strength, especially at the start of the war. Do not overextend your forces by trying to control too great an area at the start. ESW

HAVE YOU EVER WONDERED WHY THOSE OTHER "SIMULATIONS" ARE SO UNREAL? PERHAPS, WHILE DOING MORE PICTURES, THEY FORGOT ABOUT RESEARCH, TESTING, & DESIGN.

WE DIDN'T.

SIMULATIONS CANADA... FOR SERIOUS WARGAMING

LAND COMBAT:
NewMAIN BATTLE TANK: MIDDLE EAST, Modern Tactical Armoured Combat.
NewBATTLE TANK: KURSK TO BERLIN, Tactical Armour In The East.
MBT: NORTH GERMANY, Modern Tactical Armoured Combat.
BT: BARBAROSSA TO STALINGRAD, Tactical Armour In The East.
MBT: CENTRAL GERMANY, Modern Tactical Armoured Combat.
ROMMEL AT EL ALAMEIN, Battles For Egypt, 1 July to 6 November, 1942.
MOSCOW CAMPAIGN, Typhoon & White Storm, Aug 1941 to Feb 1942
TO THE RHINE, The Allied Advance In The West, 29 Aug to 11 Dec, 1944.
ROMMEL AT GAZALA, Battles For Tobruk, 26 May to 27 June 1942
STALINGRAD CAMPAIGN, The Turning Point In Russia, Jun 1942 - Feb 1943.
KURSK CAMPAIGN, Operation Zitadelle, Summer 1943.
OPERATION OVERLORD, The Invasion Of Europe, 6 June - 28 August, 1942.
GOLAN FRONT, The 1973 Arab/Israeli War In The North
FALL GELB, The Fall Of France, Spring 1940.

ORDERING INFORMATION, PLEASE READ CAREFULLY: All games are $60.00 each for Americans, $80.00 each for Canadians (GST included), and $65.00 each for purchasers outside North America. We will let cheques clear before shipping (6 weeks!), so, money orders are preferred. PLEASE be sure to tell us which computer you own. **Purchasers from outside of Canada should send payment in U.S. funds.** Nova Scotia residents must add an extra 10% of the total for Provincial tax
SIMULATIONS CANADA, P.O. Box 452, Bridgewater, NS, Canada, B4V 2X6.

Circle Reader Service #90

PAPER MAYHEM

"The Informative PBM Magazine"

Do you know what PBM (Play-By-Mail) gaming is? If you don't, we can help you explore the world of PBM gaming. Paper Mayhem has been leading the way for over 10 years by informing people about PBM gaming. Articles, reviews, biographies and more fill each issue. Not to mention the ratings of PBM games and companies that our readers participate in.

Paper Mayhem has been improving with the ever expanding hobby of PBM gaming since 1983. Each bimonthly issue brings you the latest on PBM news. So why delay and miss out on all the fun? Read Paper Mayhem and take advantage of PBM gaming today!

Send subscriptions to:
PAPER MAYHEM
Dept CG
1518 Adams Street
Ottawa, IL 61350-4770

US Subscriptions:
Single Issue $5.00
1 year $24.00
2 year $42.00

Also available, The Journal of the PBM Gamer for $3.00 $5.00 for overseas orders

FOREIGN SUBSCRIPTIONS: 1 year Canada $31.00; 1 year to Europe $51.00; 1 year to Australia $57.00. All Subscriptions to PAPER MAYHEM are to be paid in US funds and drawn from US banks. Foreign subscriptions are asked to use International Money Order in US funds.

Circle Reader Service #79

WHAT IF THE WOR
THEY PUT YOU IN CH

WERE AT WAR AND
GE OF EVERYTHING?

High Command® captures WWII in Europe on a grand scale. Spanning the war years 1939 through 1945, you are placed in complete control of all military, economic and political resources. Choose to lead the Allied or Axis war machine. Command all land, sea and air forces. Exercise your diplomatic options. Build up your military or invest in your country's infrastructure. *High Command* is more than a wargame. It's the ultimate hot seat. *Visit your local retailer or call to order 800-653-1360 in the U.S., or 800-697-2360 in Canada.*

HIGH COMMAND WILL BE AVAILABLE IN JUNE FOR THE IBM PC AND 100% COMPATIBLES. HIGH COMMAND-EUROPE 1939-45 IS A TRADEMARK OF THREE-SIXTY PACIFIC, INC. © 1995 THREE-SIXTY PACIFIC, INC. ALL RIGHTS RESERVED. IBM IS A REGISTERED TRADEMARK OF INTERNATIONAL BUSINESS MACHINES.

Friends, Romans, Taxpayers

Acquiring "Talents" for Making Money in *Caesar*

by Alan "Perennial Taxpayer Maximus" Emrich

Okay, I admit that I'm hooked on Impressions' *Caesar*, but I can tell from countless messages that I'm not the only one out there. Like many who enjoy this game, however, I'm not generating the kind of revenue I need to get my "Prosperity" rating in line with my other, more successful ratings. Thanks to some inside tips from Impressions, this article can reveal some of the revenue-building angles within the game and begins with some elaborations upon pages 77 and 78 of the manual. This first section touches upon the industry formula in *Caesar*. There is much going on behind the scenes of commerce that successful players should be aware of.

Jarring Revelations

Industry is, of course, one of a player's two main sources of income (the other being the population tax). The tax base is represented by the productivity of individual workshops. Workshop productivity is measured by the number of jars, up to a maximum of seven, in front of each workshop. Therefore, one must strive to get the maximum output from every workshop built so that they will generate more taxes and fill the player's purse.

Page 78 of the manual lists the elements that can increase or decrease each individual workshop's output of jars. Allow me to elaborate upon them with specifics so that industrious urban planners can plan industrious urban areas

The rules encourage having a nearby workforce. The truth is that only residential squares within three squares of a workshop will have a positive influence on their production of jars. (This has nothing to do with unemployment, by the way, which is an entirely separate formula). The workshops have a reciprocating effect on the nearby laborers: enforced poverty! That will be discussed a little later on in the section on property values.

Besides housing within three squares, nearby heavy industry centers also directly increase jar production at workshops. Like the housing effect radius on workshops, this radius is three squares. Note that workshops do not need either housing or heavy industries within three squares to produce any jars of finished goods at all, but they will certainly produce more when these two important production resources are nearby.

To Market, To Market, Jiggity Jig

There is one last secret to increasing workshop output. If one has a marketplace either adjacent to or within a radius of six squares along a road, the productivity bonus is in effect. Of course, having *more* marketplaces as outlets for an individual workshop's goods will increase the demand and, hence, the output of jars at that workshop. Keep this symbiotic relationship constantly in mind when designing the commercial areas of your city. It is important to place heavy industry, workshops, houses, markets and roads in the most efficient manner so that they generate the maximum number of jars from each workshop.

A last note on markets: their six square radius is not only important for indicating that works produced by workshops are being sold, but also serves as the radius in which they positively influence the growth of houses. Sadly, markets also *limit* the potential growth of a residential area, but that will be discussed a little further on.

Collecting Business Taxes

When collecting taxes, workshops are taxed as a unit. If only one square of a workshop is under "administrative influence," the whole of the workshop is taxed and the player will receive full revenue from it. Remember, heavy industries and markets do not pay business taxes directly — workshops do! The formula revolves around a few key variables (the city's population, roads leading away from the city, etc.) but the number of jars in front of every workshop is the major deciding factor for generating more business tax income.

Hint: The preset taxation values are at about the right level for maximum growth and maximum revenue. When adjusting them, it is generally wise to do so in small increments. For example, raising your business tax rate above 5% will cause production to drop off in later years, but note that there is a lag time, both for driving down the business market as well as for recovery once rates are again reduced. Therefore, avoid raising the business tax rate until the city is making a profit.

Improving Property Values and Slumming Around

The other major source of revenue is taxing the citizens. This section will present information that will help you to build and maintain high property values, the yardstick by which this income is measured. Unlike *SimCity*, one need not think in terms of low cost housing for the citizenry. Instead, as many affluent neighborhoods as possible are needed for both domestic tranquillity and revenue generation.

Table 1

The Land Value Table

Map Symbol	Val	Rad	Lim
Baths	+1	2	
Giant Baths	+2	3	
School	+1	3	
Hospital	+1	3	
Theater	+1	3	
Amphitheater	+1	4	
Hippodrome	+1	5	
Market	+1	1	10
Rubble (on fire)	-2	3	8
Rubble (cold)	-2	1	8
Heavy Industry	+1	2	3
Business	+1	3	3
Barracks	+1	3	5
Gates	+1	2	8
Temple (size 1 4)	+1	2	
Temple (size 5-8)	+1	3	
Oracle	+1	3	
Prefecture	+1	2	8
Forum (size 1 and 2)	+1	2	
Forum (size 3 and 4)	+1	3	
Forum (size 5 and 6)	+1	4	
Forum (size 7 and 8)	+1	5	
Fountain (with water)	+1	2	
Well	—	—	
Reservoir	—	—	
T-Intersection	+1	1	
4-Way Intersection	+2	1	
Plaza	+1	1	
Housing (size 1 & 2)	G-1	1	
Housing (size 3 - 5)	G	1	
Housing (size 6 - 9)	G+1	1	
Housing (size 10-13)	G+1	2	
Housing (size 14-15)	G+2	1	
Housing (size 16)	G+2	2	

Avoiding the "Filthy Lucre" Syndrome

According to Suetonius, Emperor Vespasian tried to raise revenues from the populace by instituting a very unpopular tax on public restrooms. When accused that this money was filthy lucre, Vespasian was said to have held a coin under the accuser's nose and ask, "Does it smell, my son?"

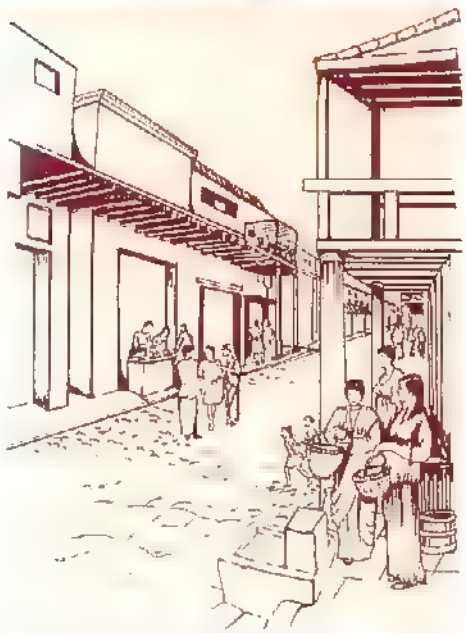
To keep one's reputation from smelling and driving the people to riot, it is important that you *raise* property values. Always remember that this is the de facto measure of the population's standard of living in *Caesar*.

Each square on the city map begins with a property value of 0. The proximity of virtually everything one can build improves that value, except for fires, rubble and new housing starts. This information is presented in Table 1, which defines the numbers used for determining land values.

In Table 1, "Val" represents the amount added to the land value for *each square* of that tile. For example, each square of a school (which has a tile taking up 4 squares in a square shaped pattern) increases nearby property values by +1. Therefore, a square directly adjacent to that school has its land value raised by a full four levels (due to being within the school's influence radius, see below).

The "Rad" value is the radius that *each individual square* of a tile projects its modifier on property values. For instance, a square next to a hippodrome, which occupies 8 squares in a pattern that is 2 squares high by 4 squares wide, has a +1 value over a 5 square radius. Thus, a square next to a hippodrome would receive a +8 property value modifier.

The "Lim" value is the maximum land value that a square within the radius of the item can reach. Most tiles come without limits, but business, in particular, severely limit the nearby property values. No matter how many other factors might influence the neighborhoods near industries and businesses, the maximum land value limit of 3 means that they will create and perpetuate slum living conditions to nearby houses.



Finally, Table 1 shows that the value of housing is modified by a variable known as "G." This stands for "growth" and is determined by one's tax rate and unemployment (the lower the better).

Driving Down Property Values

Naturally, one should always put out the fires and clear away rubble. That will stop the immediate fallout to neighborhood land values from neighboring calamities. Rebuilding those neighborhoods, however, may not be as easy as it was to establish them in the first place. The big reason is the detrimental effect of creating new housing. Table 1 shows that tent cities can drive down property values at an amazing rate. People who paint whole

Table 2

Minimum Housing Civilities Requirements

Housing Level #s	Secret Property Descriptions	Minimum Requirement
1, 2	single tent, double tent	Positive land value
3, 4	brown shack, white shack	Water supply
5, 6, 8	2x1 white shack, 2x1 white house, Road access to and white skyscraper	Forum
7, 9	2x1 house with pointy roof, brown skyscraper	Market
10, 11	2x1 w/small lawn on right, 2x1 with no lawn	Baths
12, 13	2x1 center lawn, 2x1 with a big lawn on the right	School and Hospital
14 - 16	2x2 villas and 3x3 palace or Hippodrome	Theater, Amphitheater,

Table 3
Positive Housing Influence Radius of Facilities

Source	Radius
Baths	3
Giant Baths	4
School	4
Hospital	4
Theater	4
Amphitheater	6
Hippodrome	7
Marketplace	6

areas with tents (i.e., new housing) are, according to this table, begging for trouble. Often, it is better to add new housing one square at a time and let each dwelling improve a bit before planting a tent next door.

The Real Pillars of the Community: *Property Values*

The land value of a square should be thought of as its potential property value. While there are no property taxes *per se* in *Caesar*, the property value of residential housing forms the basis of the taxes paid by the city's citizens. Therefore, it is vitally important that residential areas be constructed in absolutely the highest value land areas available.

Now, land value is *the* main consideration for improving the level of local housing. Land values, as indicated in Table 1, might have artificial ceilings placed on certain squares when they are located near a market, rubble, heavy industry, business, barracks, gate or a prefecture. Consequently, land values (and the housing built on that land near these facilities) cannot rise to their full potential.

Table 4
Water Supply Source Radii

Source	Radius
Well	1
Reservoir	3
Fountain (on)	6

The Secret Ingredient to Property Values: Civilities

Now, the effect of all cumulative modifiers presented in Table 1 is less when an area is not serviced by the basic amenities described in page 29 of the game manual (i.e., water, administration, etc.). Also, while land values have a direct effect on the growth of housing, there are other variables that affect the home market (and, hence, tax) value.

In other words, land value is also the absolute maximum that housing levels in a given square can rise to.

There is another, secret cap or ceiling that is placed upon housing development. These are the special minimum requirements for housing to evolve up to a certain level of wealth. They are presented in Table 2.

The requirements in Table 2 are cumulative. To achieve a level 16 house, all seven of these secret minimum requirements must be met and be close enough to influence a given square of housing.

The numbers such as 2x1 represent a housing tile that is 2 squares across by 1 high. Notice that type 8 houses are out of sequence. The reason is that types 6 & 8 (and 7 & 9) houses are actually of *identical* quality. This gimmick allows for fairly posh housing in areas where a 2x1 housing tile will simply not fit. In order to see these different levels of housing, first click on the house icon, then press and hold left mouse button. After that, press and hold the right mouse button so that both are held down simultaneously. That will present a display of these different graphics (as it will for baths and temples, too).

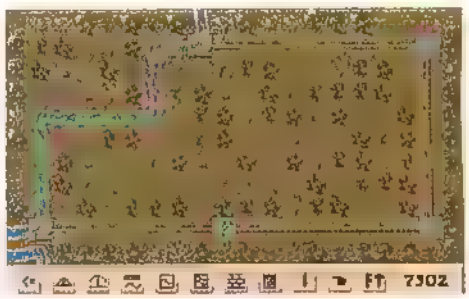
Urban civilities have their own positive effect on housing growth and improvement beyond their contributions to the land value of the neighborhood. Specifically, while their effects vary (and are hard to quantify for the rather tricky housing upgrade formula), their range of influence is provided in Table 3.

Important note: Houses grow, when periodically checked by the computer, from the top-left corner of the screen to the bottom-right one. Thus, each row of housing grows to the right, then drops a row for the next check. This can be an important consideration when planning neighborhoods, as the highest land value square should be located at the top-left corner of the block in order to better preserve the values of the rest of the neighborhood when they are checked.

A final word about improving baths and temples: in order for a bath tile to become a great bath, one simply has to raise the land value beneath it. Raising a temple, however, requires not only an increase in land value, but also an increase in the population of the neighborhoods surrounding it.

Caesar's Planning Commissioner Commentaries

When counting the radii of influence of a certain tile, be sure to count diagonal squares. Never forget the cumulative nature of overlapping influences on land and (housing) property values in *Caesar*.



The fountain in the lower-right corner is well connected to two other fountains and will keep running.

Water is power in *Caesar*. In order to receive full benefits from a land square, it must be within the receiving radius of a fresh water source. For the record, those radii are presented in Table 4.

Note that hooking up two fountains to a single reservoir doesn't work well at all. However, hooking up a third fountain as the middle link in a chain with a reservoir on each end and a fountain attached in between works very well.

The Red Tape Measure

Not only do land squares require water, they also need administrative control or they won't pay their full share of taxes. Liberals will love that things simply will not prosper unless they're under the taxing influence of government administration. How large the government office is determines the length of its arm, as shown in Table 5.

The Verdict Is In On Suppressing Riots

The other function of government administration, of course, is suppressing those who are less than content with its rule. For example, every square within a three square radius of a workshop (or within two squares of heavy

Table 5
Administrative Influence Ranges

Administrative Source	Influence Range
Prefecture	4
Forum size 1 or 2	6
Forum size 3 or 4	8
Forum size 5 or 6	10
Forum size 7 or 8	12

Table 6
Government Anti-Riot Protection

Security Structure	Artificial Land Value Increase	Radius of Influence
Barracks	+4	5 squares
Gates	+2	2 squares
Temple (1-4)	+2	2 squares
Temple (5-8)	+2	3 squares
Oracle	+2	5 squares
Prefecture	+2	3 squares

industry) has a maximum land value imposed upon it of three. Therefore, no matter how many other nearby features might raise the land value, this property value ceiling enforces slum living conditions on the very houses that improve production at workshops. That makes them prone to riot, so keep the strong arms of government, as shown in Table 6, near these slums. For the record, the security structures artificially increase the land value of an area (for anti-riot purposes only — *not* for taxation) within their radius of influence.

As many Imperial Governors have found out, the price of plummeting popularity is ruinous rioting. It's bad enough when bar-

barians have to be dealt with, but to have one's own citizens up in arms...! Perhaps an explanation of how a riot gets started is in order.

A general, city-wide check of domestic tranquillity is calculated regularly for the city. It is based on two things: the population tax and conscription levels. The higher these two elements are, the worse things will be *vis a vis* rioting.

After the city's general rating is calculated, a specific rating is calculated *for each housing square in the city.* This value is equal to the general rating (which may be a negative number), plus any local bonus as described in Table Six. If this value works out to less than 0 for any given square in the city, there may be trouble!

Specifically, that number is added to an "unrest factor" for each individual housing square. This unrest factor is the cumulative result of these additions over time; the worse the local security level is, the more negatives that are added to this factor.

When the unrest factor exceeds a certain level, a rioter is born. The amount of unrest required to spring forth a rioter varies by the quality of the housing in that particular square. Consequently, single tent housing will crank out rioters with relative ease. Note, however, that only the bottom four levels of housing will ever produce rioters. Rich levels will accumulate unrest, but they are too genteel to actually riot. That is, until their housing levels decline to one of the bottom four levels, at which time they begin to act out against the stored anger of their oppression.

All Roads Lead Where?

Brace thyself, citizen. It is almost certain that too many roads are adorning *Caesar*'s provincial capitals out there. Straight from the programmer comes this tip:

The only places where roads are *actually required* is to connect houses to a forum and businesses to their marketplaces, **period.** Unlike past experiences with *SimCity,* traffic congestion is never a problem, so one must think of these city streets that can be built as, in fact, *major* avenues of commerce (i.e., a via). Those who want to optimize their property values may not want to run roads around their civility structures (baths, schools, hospitals, theaters, amphitheaters and hippodromes). Instead, it is often more beneficial to property values to pack housing directly next to them instead.

For those who like to build roads in the provinces, you will save a few dollars if you pay to clear out intervening bad terrain with the shovel icon before you lay down the road. Even if you can't afford the road right away, this technique at least opens up a channel for armies to travel.

Defending the Ramparts

Those who build city walls will find it useful to run a road just along the inside of them. Next to the road, build a barracks. The idea is to place your barracks in such a way as to get your soldiers to pop out of them and begin patrolling the road along the wall's interior. This places them well to counter any barbarian incursions that manage to get over the walls.

When fighting barbarians in the field, the thing to note is that some tactics work better than others against each particular tribe of barbarians. The secret, of course, is to find out which through trial and error. Regulars, too, fight much better than auxiliaries. Players who outnumber the barbarians by as much as 2-1 may still lose if their army is largely auxiliaries.

Try increasing wages for the military at the start of the game and avoid conflict until you are strong enough to win the first battle. This will raise the troops' morale and make it easier to win future battles.

Reading the Unemployment Statistic

Unemployment happens. Now, while it is logical to assume that opening businesses helps reduce unemployment (it does, but only if they are prospering), other tiles effect the global unemployment number as well. Heavy industry structures will help reduce unemployment. So will marketplaces. Even building forums will make a slight dent in unemployment.

Hail, citizen! May these tips serve the leader well in his ascent through *Caesar.* Remember, as a politician, it is your job to enjoy the fruits of others' labor. Spend wisely, if you care. **CGW**

"Powerful programs of growth and adventure"

THE MAGIC MIRROR . . . a toolbox for your mind. E. Kinnie, PhD., Clinical Psychologist. $39.95

MAGIC MIRROR II . . . experiences for your mind. $39.95.

MERLIN . . . an apprenticeship. $29.95.

I CHING . . . ancient Chinese wisdom and prophecy. $29.95.

THE MAGIC MOUNTAIN . . . a journey into another reality. Not for children. Male and female versions. $39.95.

SCREEN SAVER . . . math art and fractals, lively and colorful. $19.95.

MasterCard/Visa
1-800-545-6172
(after 5 p.m.)

Call or write for free catalog.

Blue Valley, 29 Shepard St., Walton, NY 13856

Circle Reader Service #36

BASED ON BRAM STOKER'S ORIGINAL NOVEL

For Windows. Excellent graphics, interface, sounds!

Count Dracula is somewhere in London. Use your wits to track down the bloodthirsty vampire and put an end to his evil menace. Assume the role of Prof. Van Helsing, the renowned metaphysician or Mina Harker, the alluring young schoolmistress. Learn the secrets of Renfield, the madman. Explore haunted mansions and much more ...

$29 each. Mail check, cash or money order to:
SDJ Enterprises, Inc.
1551 Fawn Valley Dr.
St. Louis, MO 63131
(314) 966-5602 (Evenings Only)

World Renowned

Requires:
Windows 3.1
VGA graphics
386 25Mhz or faster
Supports Sound Blaster
Easy to Install

Not available in stores. Satisfaction guaranteed or your money back.

Circle Reader Service #87

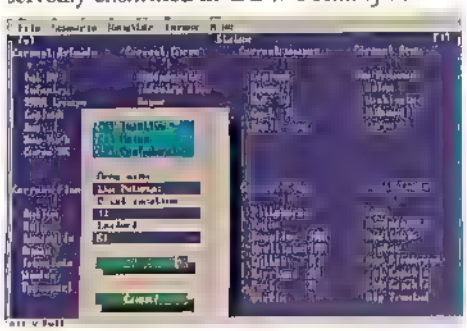
A Bird's Eye View from Vancouver

The Road from Sumter to Appomattox

by Terry Lee Coleman

The American Civil War is not just for Americans. Rather, it cuts across all gamer's nationalities. Never was this more apparent than in a tournament of the classic boardgame *A House Divided* (from **Game Designer's Workshop**) at the Origins national game convention five years ago, where six of eight quarterfinalists were from Canada! My opponent from Toronto (whom I must confess, beat me — my only loss at *A House Divided* in three years) confided to me that in some ways, the American Civil War is almost a Canadian pastime. No surprise then, that a new company from Vancouver would come out with an American Civil War game.

What *is* somewhat of a surprise is the grand wargaming scope attempted by **Adanac Command Systems Corporation** in their first game, *The Road From Sumter to Appomattox (Sumter)*, released for both IBM and Amiga computers. Three scenarios cover Manassas, Shiloh, and Antietam, while campaigns cover action beginning in either 1861, 1862 or 1863, with play ending in 1865 in all cases. American Civil War (ACW) simulations on computer are hardly new, the most notable being SSI's *Gettysburg: The Turning Point*, deservedly enshrined in CGW's *Hall of Fame*.



Despite successful designs on the tactical level, computer games trying to cover the entire conflict from a strategic standpoint have ranged from **Data East's** laughable *North & South* to the uneven and overly political *No Greater Glory* (**SSI**). If the renowned designer Ed Bever has trouble encapsulating the entire ACW, what makes our Canadian friends so confident?

Focus... or Could You Adjust the Picture, Please?

Perhaps inspired by **PBS's** *The Civil War*, designer Frank Hunter opens the game manual with a touch of humanity, by remembering Richland Kirkland, the "Angel of Marye's Heights," who gave opposing wounded Union soldiers water as they lay dying. In that same spirit, I will attempt to be sympathetic to what the game accomplishes, rather than what it wishes to be (which is not always obvious).

Graphically, *Sumter* is quite pretty, with its 256-color VGA display (which I suspect might look even better on an Amiga). One can easily get the unit manifest from a function key, and although the units look "blocky" in closeup, this is more the failings of the IBM than the graphic design — even *Civilization* has this problem to a degree. After a couple of playings, telling the various units apart becomes fairly simple.

What is not so simple is that all people who have a passing interest in the ACW, may or may not know the difference between a division and a brigade. Since the designer states that *Sumter* was designed to be played rather than set on a shelf, why not give some basic

information on military units in the manual for the neophyte?

Even worse, the player must "arm" the various units before they may fight. The idea is to show the difficulties in getting supplies to the front, especially for the Confederates. While different charts are easily accessible, showing manpower ratios, cannon and foodstuffs available, does the average player really need to know how much cotton he has in Florida, as if that might effect his mounting an offensive? Supply wagons litter the map, adding to the confusion, often making the game appear like some distant cousin of the infamous boardgame *Campaign for North Africa*. Logistics are certainly important in any simulation, but for the amount of "detail" involved, there are still many abstractions.

Forage is included, of course, but why not the option of scrounging for ammunition? In

TITLE:	The Road From Sumter to Appomattox
SYSTEMS:	Amiga, IBM
GRAPHICS:	VGA
PRICE:	$54.95 (PLUS $5 S&H)
DESIGNER:	Frank Hunter
PUBLISHER:	Adanac Command Systems Corporation 102 - 1345 West 4th Avenue Vancouver, B.C. Canada V6H 3Y8 (604) 739-1162

many areas of the South, church bells and other metal works were melted for bullets and cannonballs. At Pea Ridge, a company armed mainly with shotguns shot a mixture of rocks, salt and nails! Here is where the designer could have gone for simplicity, perhaps giving the players so many food and ammo points to pass around per state, instead of making *Sumter* the computer version of "I Was Quartermaster at Gettysburg."

Politics muddle the issues in *Sumter* as much as in real life. This is evidently what the designer intended. Players must think about ramifications of European Intervention, Emancipation and the like. A broadening of strategic problems is quite appropriate in a game on this level, and the player is not burdened with tedious political detail as in *No Greater Glory*. Players can even experiment with ahistorical options, such as moving the Confederate capitol to Atlanta.

Where Exactly is That Trail?

Movement in 19th-century America was quite difficult, something *Sumter* recreates very well. Once again, wargame jargon gets in the way — nor everyone out there counts hexes, like sheep, in order to fall asleep each night. Still, movement is pretty simple; clicking first on the unit, then on its destination. While the movement rates are listed, the hex scale is not given, so players will have a bit more trouble figuring out how far their units are going compared to the actual wartime marching rates.

Basically, water is three times as fast as going by foot, while rail is five times as fast, provided that the player has not exceeded his rail movement capacity for the turn. Units expend movement points to enter various types of terrain, much as in a boardgame, except that in *Sumter*, the movement points are not printed on the units. Morale and supply also affect unit speed. In practice, the movement rules work well, providing a degree of uncertainty as to when units will reach their objectives, making for interesting campaign decisions. As in some SSI games, units will sometimes act on their own initiative, retreating or entrenching in the face of the enemy.

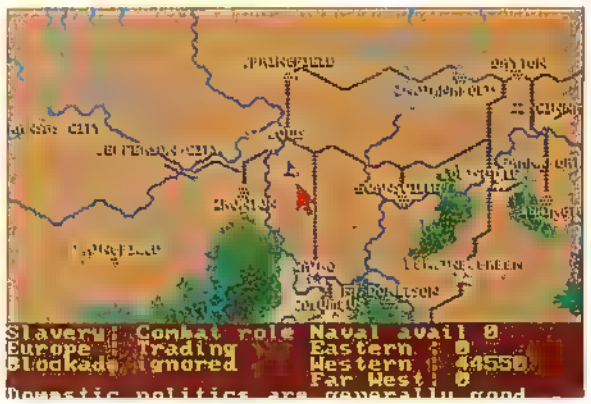
Sea movement is very detailed, with separate rules governing river or ocean-sailing ships. Ironclads are available for both sides, but their expense makes it rare for the Confederates to purchase one. The blockade of Southern ports is handled abstractly, with effects increasing throughout the game, depriving Rebel units of supply. Confederate raiders are effective during the first two years of the campaign, then become as scarce as they were historically.

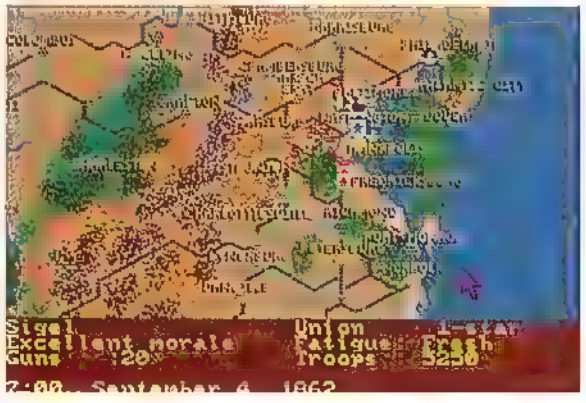
"You Like These Oak Clusters? Well, They Sure Cost Enough!"

Leaders are the core of the game. This is good, because they help *Sumter* overcome many of the more mundane and tedious design elements. In general (no pun intended), the leader rules make sense. Most of all, they are *fun*.

Tactical abilities range from three to ten at the start of the game, and leaders such as Lee and Jackson increase their values quickly as they win battles. Initiative ratings vary greatly and improve as the leader stays with a particular command, getting to know the unit, as it were. Better organized leaders (Lee again) improve initiative values more quickly, resulting in quicker reaction and mobilization to counter enemy threats. Battles such as Chancellorsville are therefore possible to recreate in the context of the game. Aggressiveness comes from a willingness to engage the enemy and can be as much a liability as an asset. Overly aggressive commanders have appropriately higher casualty ratios. Having separate Rally ratings allows every commander to affect desertion differently, and also allows McClellan to have some use in the game.

At various times, screens pop up, showing certain units being trained, armed or whatever. A dynamic leader in a high-profile area, such as Washington D.C., gives the player the feeling that he is accomplishing something between battles. The player may also reassign leaders and promote leaders after they have accumulated enough "promotion points." (Sorry, Stonewall, but I gave that new opening at Vicksburg to Pemberton. You know how hard he's worked.") Regardless of which side is chosen, putting the right leaders in the right places takes a lot of skill. The best thing about the leader system is that it allows leaders to be promoted to positions past their abilities, retaining aggressiveness without the necessary initiative or tactical abilities to lead larger forces.



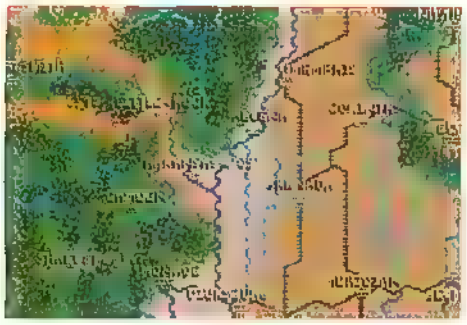


"After 'Em, Boys! Huzzah!"

Sumter has a simple combat system to resolve "trivial" battles, and an involved tactical sub-game for those with too much time on their hands. The simpler method evaluates each side and assigns a relative advantage to the side with the best combination of fresh and experienced troops, good defensive terrain, morale, and the best leader. Units are pushed until their morale breaks, at which point they are withdrawn *by the computer*. A similar fate awaits units having the misfortune to become exhausted.

Mr. Hunter joins a growing number of computer wargame designers in providing information to the players on how the system works. The astute player will be able to figure the probability of success for individual units. Seen from this perspective, the game system seems to model combat much as a board wargame would (although many wargamers will want more control, which the simulation allows them to adjust).

The inherent irony is that computer wargames are supposed to be new and somehow different — able to free the gamer from the mundane restrictions imposed by cardboard counters and paper maps. *Sumter* has some good ideas. For instance, the tactical combat system is entertaining for a while. However, these very strengths that are sprinkled through *Sumter* are mirror images of games, both board- and computer-based, which have done those selfsame things much better. At times, *Sumter* seems little more than an homage to Eric Smith's *The Civil War* boardgame (Victory Games, 1983), with similar rules for supply and leader removal. Smith's game also differentiates between smaller (trivial) and larger battles, having different combat tables for each. Both games emphasize naval operations almost to a fault. Where the games differ



is that *Civil War* is still surprisingly fresh after ten years, all of its rules fitting in such a manner as to create an understanding of the ACW, albeit in a fairly complex package. *Sumter* attempts to emulate the success of its foster parent, but has instead absorbed the trappings of the design philosophy, without a complete understanding of *why* its predecessor worked so well.

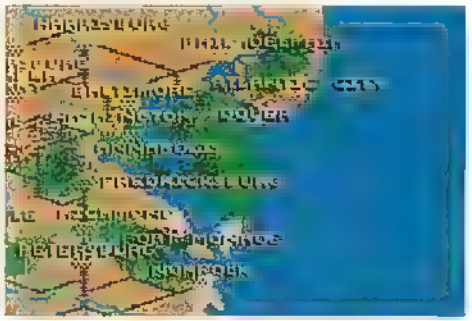
Nowhere is this more evident than in the "tactical combat" resolution game, where that ancient ogre "fog of war" rears its unwholesome head. When deployed, units cannot see the enemy until they move adjacent. Fair enough, but there are enough rules covering intelligence that exceptions could certainly be made, especially since choosing when and where to fight was a great deal of Robert E. Lee's genius (except at Gettysburg, where he was without the "eyes" of his cavalry).

Columns, line deployment and facing are all included, with changes in formation subject to unit training and morale. Each brigade can be given separate orders, through the use of "operations points." Leaders may lead units directly into battle or stay in the rear and rally troops. If all this sounds somewhat familiar, it is because many board wargames, particularly those on the ACW, have accomplished similar goals with less meandering (*Terrible Swift Sword* by TSR and *Chickamauga* by West End Games come immediately to mind).

From a computer game perspective, SSI's ACW games have a much more authentic feel, particularly in the command area, where to overcome uncertainty, the players must think differently than a board wargamer. Moreover, *Sumter's* biggest failure is that the "tactical game" simply does not fit with the rest of the design, from either a complexity or philosophical standpoint.

"Tough Time of it Today?" "Yep. Lick 'Em Tomorrow, Though."

What Hunter and the fellows at Adanac Command Systems Corporation have fallen into is the old trap of *realism vs. playability* which has plagued their boardgaming brethren for the past three decades. *Sumter* risks offending both "control freaks" and those just looking for a good, clean game about the ACW. The research makes no claims to be perfect, yet the game has a wealth of information. Gameplay is often irritating, but certain aspects, such as the use of leaders, when used with the simpler combat system, make all the trouble nearly worth the while.



Underneath all the confusion and various bugs which surround every new release these days, *Sumter* offers a different perspective on the ACW. What Hunter & Co. need to do in future releases is to trust in the uniqueness of their personal vision, and not feel the need to use every idea from every other ACW game ever done. When they implement things like a cleaner interface, less cumbersome supply rules, etc. all mentioned previously in this article, what a truly great game *Sumter* would be! CGW

THE ULTIMATE ROLE-PLAYING AID

Introducing **The Ultimate Character Editor.** This exciting new product features full mouse and keyboard support, online context sensitive help and a complete windowing system (does not require MS Windows to run). This editor allows you to edit most of the games listed below (including all of the Might and Magics, all of the Ultimas, all of the SSI games, all of the Bard's Tales, and more). The price for this editor is $59.95. So, for the price of 3 editors, you will be getting approximately 30 editors. Upgrades will be available to handle new games as they are released for only $9.95.

- **CHARACTER EDITORS — $19.95 each**
  Might and Magic (1, 2, 3 or 4), Drakkhen, Pool of Radiance, Hard Nova, Bard's Tale (1, 2 or 3), Wasteland, Dragon Wars, Space Rogue, Wizardry (Edits 1-3), Wizardry 4, Wizardry 5, Bane of Cosmic Forge, Crusaders of the Dark Savant, Treasurers of the Savage Frontier, Sentinel Worlds I, Knights of Legend, Secret of the Silver Blades, Curse of the Azure Bonds, Champions of Krynn, Space 1889, Keys to Maramon, MegaTraveller (1 or 2), Keef the Thief, Darklands, Escape from Hell, Ultima (3, 4, 5, 6 or 7), Dark Heart of Uukrul, Savage Empire, Tunnels and Trolls, Lord of the Rings (1 or 2), Countdown to Doomsday, Martian Dreams, Eye of the Beholder (1 or 2), Death Knights of Krynn, Fountain of Dreams, Magic Candle (1 or 2), Pools of Darkness, Ultima Underworld, Twilight 2000, Planet's Edge, Dark Queen of Krynn, and Prophecy of the Shadow

- **HINT BOOKS — $9.95 each**
  Might and Magic 1, Knights of Legend, Curse of the Azure Bonds, Champions of Krynn, Legacy of Ancients, Dark Heart of Uukrul, Wizardry (1, 2, 3, 4, 5, Bane or Crusaders), Eye of the Beholder 2, Might and Magic 3 (12.95).

IBM listed. Apple, C64 and Amiga versions also available.
Please add $4.00 for shipping and handling
Open from 9AM - 9PM every day for your convenience

VISA **GOSSELIN COMPUTER CONSULTANTS** MasterCard
P.O. Box 1083 • Brighton, MI 48116 • (313) 229-2453

Circle Reader Service #61

SOFTWARE CLOSEOUTS
IBM, AMIGA, APPLE, COMMODORE 64/128, ATARI ST, MAC & MORE

IBM BARGAINS UNDER $10

FAST BREAK, Accolade	$9.50
DON'T GO ALONE, Accolade	$9.50
OUTRUN, Sega	$9.50
SPACE HARRIER, Sega	$5.00
GUNSHIP, Microprose	$9.50
CROSSBOW, Absolute	$5.00
MIND DANCE, Mindscape	$5.00
MY GRAND PIANO, Fisher-Price	$9.50
MAGIC JOHNSON BASKETBALL	$9.50
BEGINNING ALGEBRA, Dinosoft	$9.50
GEN. KNOWLEDGE BUILDER	$9.50
HUMAN BIOLOGY A.E.G.	$9.50
SANDS OF FIRE, Three-Sixty	$9.50
ARMOR ALLEY, Three-Sixty	$9.50

SIERRA for IBM $20 EACH
QUEST FOR GLORY 2, F-RETHAWK, CODENAME ICEMAN, HEART OF CHINA, KING'S QUEST 1-or-4, OIL'S WELL, COLONEL'S BEQUEST, LEISURE SUIT LARRY 1-or-3, RISE OF THE DRAGON, THEXDER, MIXED UP MOTHER GOOSE, SPACE QUEST 1-or-2-or-3
CALL FOR OTHER TITLES!

LAND, SEA & AIR TRILOGY
by Microprose. 3 GAMES $20
Includes: AIRBORNE RANGER, PIRATES! & GUNSHIP FOR IBM

Hoyle's Book of Games Vol. 2
SOLITAIRE, by Sierra. $15
Includes 28 Solitaire games with mouse support. Tons of fun!! For IBM on 3.5" disks only.

IBM/MS-DOS BARGAINS UNDER $20

Monday Night Football VGA	$16.50
Sharkey's 3D Pool	$19.50
Microleague Football	$14.50
Microleague Baseball	$14.50
F-15 Strike Eagle	$16.50
Solo Flight	$18.50
Tomahawk	$14.50
Star Glider I	$14.50
Xiphos	$14.50
MEGAFORTRESS	$16.50
Carrier Command	$14.50
Sky Chase	$14.50
David Wolf Secret Agent	$14.50
Blue Angels	$14.50
Rocket Ranger	$14.50
Air Strike U.S.A.	$14.50
Blue Max	$14.50
Dark Heart of Uukrul	$16.50
Buck Rogers 1	$19.50
Buck Rogers 2	$19.50
Heroes of Lance	$19.50
Dragons of Flame	$19.50
Questron II	$16.50
Jetfighter	$19.50
NEWSROOM PRO	$19.50
CERTIFICATE MAKER	$16.50
EGA PAINT 2005	$14.50
DAS BOOT	$14.50
MANHUNTER NEW YORK	$14.50
X-MEN 2	$19.50
PUNISHER	$19.50
DR. DOOM'S REVENGE	$14.50
AMAZING SPIDERMAN	$14.50
SUPER CONTRA	$14.50
TWILIGHT 2000	$14.50
LIGHTSPEED	$14.50
COVERT ACTION	$14.50

IBM SPECIALS WHILE THEY LAST...

RED BARON, by Sierra	$25.00
BATTLECHESS 2, by Interplay	$19.50
HARPOON CHALLENGER PAK	$25.00

ADULT FUN FOR IBM FROM FREE SPIRIT

SEX VIXENS FROM SPACE	$14.50
SEX OLYMPICS (VGA only)	$16.50

SOLD ONLY TO ADULTS 21 & OVER.

MINDSCAPE/THUNDER MOUNTAIN SUPER BUNDLE FOR C 64/128
10 GAMES FOR $15.50
Includes: Demolition Mission, Army Moves, Bad Street Brawler, Tai-Pan, Fist, Tai-Cell, Mutants, Cyrus Chess, Dac the Destroyer, & Uridium

LEISURE SUIT LARRY BUNDLE FROM SIERRA for IBM/MS-DOS
Includes
Leisure Suit Larry 1, 2 & 3 !!
Only $30

MARVEL TRILOGY
Includes
Amazing Spiderman, X-men & Dr. Doom's Revenge.
Only $20 !!

STAR COLLECTION for IBM
10 GAME BUNDLE
from Electronic Zoo
SUPER SALE $19.50
Includes: Paris-Dakar, Skidoo, 20,000 Leagues under the Sea, Legend of Djel, Mouldy Old Dough, Balloon Lagoon, Mechanic Panic, Plasma Pool, Space Scape, & best selling TREASURE TRAP !

TROIKA 3-pack
from Paragon Software for IBM
.....SALE.....$14.50
Includes REBEL PLANETS, WAR & METAL HEARTS. All are Windows 3 compatible with VGA, mouse & sound card support!! Fast paced multi-level arcade action with 100's of levels of exciting play. Strategy & quick reflexes required.

VISA/MC ORDERS CALL TOLL-FREE
1-800-676-6616
Credit Card Orders Only ! ! ! ($25 minimum)

1000's more items for all different computers... Apple, Atari, Amiga, C64/128, MAC & lots more IBM/MS-DOS !!

COMPSULT
P.O. BOX 5160
SAN LUIS OBISPO
CA 93403

TO ORDER: Send check or money order including shipping charges of $5 for U.S.A., $8 for Canada, $16 all others. Californians must include 7.25% sales tax. To receive our catalog with 1000's of closeouts for all computer types, send $2 in cash or U.S. postage stamps. DO NOT CALL FOR A CATALOG!!! To check for an item not listed here, call (805) 544-6616.

Circle Reader Service #43

DISK-COUNT SOFTWARE

Lowest delivered prices with great customer service.

800-448-6658

PRODUCT INFO & OTHER BUSINESS:
908-396-8880

MASTER CARD, VISA, DISCOVER, AND AMERICAN EXPRESS ACCEPTED WITH NO SURCHARGE.

SHIPPING IS ONLY $4.00 PER ORDER, NOT PER ITEM

A Train 39
Construction Set 22
Aces Over Europe 44[95]
Aces of the Pacific 39[95]
Mission Disk 25
AD&D Collect Ed 2 42[95]
AD&D Starter Kit 42[95]
AD&D Unlimited 31[95]
Adi.Bud&JuniorVol1 34[95]
Air Bucks 34[95]
Air Duel 33[95]
Air Warrior SVGA 39[95]
Algebra Blaster Plus 30
Algebra Made Easy 25
Aliens Ate Babysitter 32
Alone in The Dark 35[95]
Alphabet Blocks 29[95]
Amazon 38[95]
Ambush 37[95]
Ancient Civil War 25
Ancient Art War Sky 25
Ancient Empires 30
Animation Studio 75
Armored Fist 37[95]
Ashes of Empire 45[95]
A.T.A.C. 35
Automap 44
Automap Windows 57
Automap Europe 74
B-17 Flying Fortres 39
Bane Cosmic Forge 30
Barbie Design 10
Barbie Fashion 25
Barbie Adventure 25
Battlechess 4000 VGA 30
BattleChess 4000 SVGA 36
Battlefield 37[95]
Battle Toads 24[95]
Battles of Destiny 35[95]
Beau the House 29[95]
Betrayal at Krondor 35[95]
Betty Crock Cookbook
Bill Elliot NASCAR 30
Birds of Prey
Blueforce 39[95]
Body Illustrated 47[95]
Bodyworks 42
Bridgemaster 30
Bug Bunny WrkShp 31
Buzz Aldrin 39[95]
Campaign 34[95]
Capitalist Pig 38[95]
Car and Driver 37[95]
Carrier Strike 39
Carriers at War 37[95]
Castle 2 35[95]
Castle of Dr. Brain 30
Ceasar 35[95]
Challnge 5 Realms 33[95]
Champions 36[95]
Chemistry Works 38
Chessmaster 3000 29[95]
Chessmstr 3000 Win 35
Children Writ & Publ 33
Civilization 37
Civilization MPE 45
Classic Adventure 30
Coaster 25
Comanche 42[95]
Mission Disk 25[95]
Combat Classics 31[95]
Comic Book Creator 17
Cohort 2 19[95]
Conquered Kingdom 35[95]
Conquest of Japan 35
Contraption Zak 25[95]
Creepers 29[95]
Crusader Drk Savnt 39[95]
Cuckoo Zoo 31[95]
Cyber Space 34[95]
Dimensgate 32[95]
Dagger of Amon Ra 39
Dark Half 39
Darklands 38
Darkseed 39
Dark Sun 47[95]
Daughter of Serpent 31[95]
Dbr Paint Animation 85
Dbr Paint II Enhncd 85
Deg Vu 1 & 2 31[95]
Design Yr Own Hm 39
Design Your Railrd 35
Designasaurus II 23
Diet Pro DOS/Win25/36
Dinosaur Adventure 34
Dog Fight 37[95]
Dr Jam Wind. 50[95]
Dr. Quandry 31
Dragon
Dragon's Lair I 25
2 or Singe Castle 37
Dragon Lair III 39[95]
Dune 2 36
Dungeon Master 29[95]
Dynamix Bundle 42
Eagle Eye Mystery 31[95]
Eco-Quest 1 or 2 29[95]
El Fish 35
Empire Deluxe 35
Entr Pak Win (ea) 28
Eric the Unready 35[95]
Eye of Beholder 20[95]
Eye of Beholder 2 38
Eye of Beholder 3 42
F 15 III 44
F 15 III Limited 49[95]
F117a Stealth Fight 41
Facts in Action 31
Falcon 3.0 45
Oper Fight Tiger 25
Family Tree Maker 42
Farm Creativity Kit 18
Fatty Bear Birthday 31[95]
Femme Fatale 28
F. F. Data Disk 21
Fields Of Glory 33[95]
Flight Simul A.T.P. 37
Flight Simul (M.S.) 41
Air Trfc Cntlr 34[95]
Arch/Scen Dsgn 20
Aircraft Adv Fltary 25
B 52 17
B 707 17
Airport Facty Loc 17
California 37
F 5 Pro 24
Great Britian 37
Hawaii 19
Instant Facft Loc 19
Instrument Pilot Scen
Japan Scenery 19[95]
Pilots Pwer Tls 24[95]
East/West U.S. ea 59
Rescue Air 911 17
Scenery Sl A or B 37
Scenery Enhn Ed 75
Sound & Graphic 25
Tahiti 19
Western Europe 19
Follow the Reader 29[95]
w/ Sound Source 40
Four Crystal Trazer
Free D.C 37
Front Page Sports 39[95]
G-Force 19[95]
Gambit 31[95]
Game Maker 69[95]
Games:Summer Chlg 35
Games:Winter Chlg 35
Gateway 35
Gemfire 31
Global Conquest 35
Gobliins 1 or 2 22
Gods 25
Grand Slam Bridge II 31
Grandmaster Chess 36
Great Naval Battle 43[95]
Super Ships 20[95]
Greens 35
Gunship 2000 36
Scenario Disk 24
Guy Spy 29
Hardball 3 35
Data Disk ea. 17[95]
Harpoon Designer 32
Harpoon Signature 49[95]
Harrier Assault 34[95]
Headline Harry 37
Health & Diet Pro 26
Heaven & Earth 30
Heimdall 19[95]
Heros of 357th
Hole in 1 Golf Dlx 25
Hong Kong Mahjong 32
Hoyle Bk Game 2 22
Hoyle Bk Game 1/3 30
Humans 25
Incn * 29[95]
Incredible Machine 29[95]
Indiana Jones 4 37
Inspector Gadget 35[95]
Island of Dr. Brain 29[95]
Jack Nicklaus Signt 39[95]
Jeopardy Silver 25
Jeopardy Super 32
Jetfighter 2 39
Adv. Mission Disk 19
Bundle Price 49
John Madden 2 31[95]
Jump Jet 38[95]
KGB 19
Kid Cuts 35[95]
Kid Desk 25
Kid Pictures 19[95]
Kid Pix 35[95]
Kid Pix Companion 25
Kid Works 2 35[95]
Kings Ransom 34[95]
Kings Quest 1 VGA 37
King's Quest 6 45
Knowledge Advent 42
L A Law 31[95]
Land Of Lore 34[95]
Lafter Utility 22
Leather God Phb 2 24
Legacy Necromancr 19[95]
Legend of Kyrandia 35
Legends of Valour 38
Leisur Suit Larry 5 39[95]
Lemmings 29
Oh No More Addon 22
Lemm.-Oh No More 31
Lemmings 2 35[95]
Liberty or Death 35
Life and Death 2 32
Line in the Sand 25
Links 25
Links 386 Pro 39
Course Disk ea 19
386 Courses ea 19
Lord of Rings 2 37
Lost File Sherlck H 41[95]
Lost Treas Infocom 42
Lost Treasures 2 29
Lost Tribe 25
Lost Vikings 29[95]
Lure of Temptress 32
Magic Candle 3 37[95]
Mantis 39
Mario is Missing 35[95]
Missing City Dlx 17
Mario Teaches Type 25
Math Blaster Mystry 29[95]
Math Blaster Plus 29[95]
Math Blaster Wrld 36
Math Copter 25
Math Rabbit 25
Math Zone 31
Mavis Beacon Type 29[95]
Mavis Beacon Wind 35[95]
McGee 3 Pack 32
Mega Lo Mania 29[95]
Mental Math Games 37
Mercenaries 37[95]
MetroGnome Music 31
Michael Jordon Flight 42
Mickey ABC's,
Color or 1-2-3's 19[95]
Mickey's Crossword 19
Mickey Jigsaw Pzl 31
Mickey Word Advent 25
Micro Cookbook 4.0 32
Microleagu 4 BaseB 32
Microleague FB Dlx 32
Microleague Soccer 25
Microsoft Golf 39
Midnight Rescue 35
Might and Magic 3 38
Might & Magic 4 40
Mike Ditka Chlmt FB 37
Mike Mach House 31
Mixed-up Fairy Tale 30
Mixed Up Mother Gs 30
Monkey Island 1 or 2 23
Monopoly Deluxe 34
Moonbase 25
Mystery at Museum 35
New Math Rabbit 29[95]
N.Y. Times X Word 32
NFL Challenge Prem 59
NFL F.B. Konami 30
NFL Video Pro 45[95]
Nigel's World 31
No Greater Glory 20[95]
Nobunagas Ambition 37
Number Maze 38
Omar Sharif Bridge 37
Operation Neptune 35
Orbits 29[95]
Oregon Trail 28
Deluxe 34[95]
Origin FX 45
Once Upon Time 30
Out of This World 38
Outnumbered 30
Pacific Islands 2 29[95]
Pacific Wars 47
Paladin 2 35
Paperboy 2 27
Patriot 42[95]
PC Globe 39
PC USA 31
PC Study Bible 42
Peppers Adventure 29[95]
Perfect General 36
Data Disk 22
Phonics Plus 25
Pirate's Gold 36[95]
Playroom w/ Sound 31
Police Quest 3 35[95]
Popeuus 2 37
Pool Shark 19[95]
Power Hits Kids 31
Movies 25
Sports 25
Sci Fi 25
Battletech-Mech 32
Powermonger 32
Print Shop Deluxe 45
Graphic Coll. (ea) 30
Print Shop, New 30
Graphics (ea) 22
Print Sp Companion 31
Privateer 47[95]
Pro League Baseball 35
Prophecy* 22
Prophecy of Shadow 38
Protostar 39[95]
Putt Putt Parade 32
Putt Putt Fun Pack 26
Quest for Glory 1 22
Quest for Glory 3 39
Rags to Riches 35[95]
Railroad Tycoon 19[95]
ReachForThe Skies 19[95]
Reader Rabbit 35[95]
Reader Rabbit 2 35[95]
Ready for Letters 35[95]
Realm Roll VGA 31
Reading Adv in Oz 38
Red Baron 39
Mission Disk 17
Realms 19[95]
Return O the Phtm 33[95]
Rex Nebular 37
Riders of Rohan 31
Ring World 34[95]
Risk for Windows 29[95]
Rusty Woods 25
Road & Track Pres 35
Road to Final Four 37
Robosports Wind 34[95]
Rodney Fun Screen 31
Rock & Bach Studio 35
Romance 3 Kng 2 39
Rome 29[95]
Rule Engagment 2 38
Sargon 5 38
Science Adventure 42
Scooter Magic Castle 32
Scrabble Deluxe 30
Sea Rogue 19
Seal Team 37[95]
Second Front 29[95]
Sort Weapon Luftw 35[95]
Tour of Duty ea 20
Sesame St Lrn Cles 31
Sesame St Publsh 25
Sesame St Vol 1or2 17
Seven Cities of Gold 38
Shadow President 39[95]
Shadow Prophecy 30
Shadowgate 27
Shadowlands 29[95]
Shanghai II 31
Siege 38
Dogs of War 20[95]
Sierra Action Five 25
Sierra Award Winner 47
Sierra Family Fun 32
Sierra Starter Bndl 39[95]
Silent Service 2 19[95]
Sim Ant 34[95]
Sim City 30
Sim Ant French 35
Sim City Windows 34[95]
Sim Earth 39[95]
Sim Life Dos/Wind 35[95]
Simpsons 31
Snap Dragon 32
Snoopy Game Club 29
Solitaire Window 29[95]
Solitaires Journey 35
Space Ace 2-Bord 36
Space Adventure 42
Space Hulk 37[95]
Space Quest 4 37
Space Quest 5 39[95]
Spaceward Ho 35[95]
Spear of Destiny 39[95]
Special Forces 29
Spectre 35[95]
Speed Reader 31
Spellbound 31
Spellcasting 301 35
Spell Craft 32
Spell-It Plus 30
SpellJammer 37[95]
Sports Adventure 33
Sprouts! 39
Star Control 2 35[95]
Star Legions 37[95]
Star Trek 25th Anv. 37
StarTrek AudioClip 34[95]
Next Generation 38[95]
Star Trek Screen Sav 37
Stickybr Math Tutor 30
Stickybr Pre-School 30
Stickybr Read Tutor 30
Stickybr Spell Tutor 30
Storm Across Europe 38
Storybook Weaver 29[95]
Strike Commander 47[95]
Strip Poker 3 32
Data Disk (ea) 17
Studyware for ACT
GMAT,GRE,SAT 30
Studyware Biology,
Calc Chem Econ
Physics, Statistic 25
Studyware LSAT 37
Stunt Island 37
Summer Challenge 34
Super Tetris 31
Take a break X-Word 29[95]
Pinball * 29[95]
Task Force 1942 37[95]
T.M.N.Turtle Arcade 25
T.M.N.Turtle Advntr 32
Tengens Arcade Hit 25
Terminator 2029 39[95]
Tennis 2 Cybrchess 35
Tetris Classic 31
Tetris Trio 30
The Legacy 37[95]
The Lost Vikings 29[95]
Time Riders America 35
Time Treks 38
Time Quest 37
Tom Landry Football 30
Tony LaRussa Base.17
Tony LaRussa II 37[95]
Expansion Disk 15
Top Class Sense ea 16
Traders 19[95]
Treasure Cove 35
Treasure Math Storm 35
Treasure Mountain 35
Treehouse 35
Tristan Pinball 32
Trolls 25[95]
Trump Castle 3 29[95]
Turbo Science 30
Turbo Tools 89
Ultima 7 47[95]
Forge of Virtue 17
Ultima 7 Part 2 47[95]
Ultima Trilogy 1 37[95]
Ultima Trilogy 2 47[95]
Ultima Underworld 47[95]
Part 2 47[95]
Ultrabots 37[95]
Uninvited Windows 31[95]
U.S. Atlas DOS 31
Utopia 29[95]
V for Victory 1/2 ea 45[95]
Vegas Games Win 19[95]
Veil of Darkness 37[95]
Virtual Reality St 2 59[95]
Wacky Funster 19[95]
Wairworks 35[95]
Wayne Gretzky 3 35
Western Front 29[95]
When2Worlds War 35[95]
What's My Angle 30
Wheel Fortune Vana 25
Where Carm SanDiego
America's Past 34[95]
Europe 30
Time 30
USA 30
USA Deluxe 44[95]
World Deluxe 44[95]
Wild Science Arcad 35[95]
Wilson ProStaffgolf 25[95]
Ween:The Prlcy 34[95]
Willy Beamish 25
Wing Comandr 2 47[95]
Wizardry Trilogy 31[95]
Word Muncher 30
Word Torture
Ital, Germ, Span 25
Wordtris 29
World Atlas DOS 39
World Circuit 34[95]
Writer Rabbit 30
X Wing 39[95]
Your Prsnl Trnin SAT 30
Zodiac Signs 39[95]
Zoo Keeper 36
Zug's Spelling Adv 22
Adv of Eco Island 22
Dinosaur World 22
Race Thru Space 22

Mice & Trackball

Acc. Int MousePen 70
Microsoft Mouse 85
Mouseman Serial 69
Trackman Serial 79

Modems & Fax

Maxtech 2400 Int/Ext
Practical Peripherals
PM 14.4 Int. 129
PM 14.4 Ext. 175
Sportster 9600 Int. 129
Sportst 14.4 v.42bis 209
Zoom External 62
Zoom Internal 59

Scanners

Scanmaker II 859
Scanman 32 133
Scanman 256 259

C D ROM

Aesops Fables 33
Aircraft Encyclopdi 45
Aloha Hawaii 45
Amer Bus Phnbk 29
Amer Hist Pict Dict 75
Arthur Teacher Trbl 41
Audubon Mammals 37
Autodesk Explorer 119
Barney Bear Goes to School 26
into Space 26
Batik Designs 45
Battlechess 40
Beauty & Beast 40
Beethoven Ninth 59
Berlitz Think & Talk
French 105
Spanish 105
Bible Library 49
Bibles & Religon 30
Bookshelf 129
Britannica Family Chc 75
Business Master 32
Buzz Aldrin Race 59
Carmen World Dlux 65
Career Opportunities 42
Cautious Condor 45
C D Game Pack 55
C D Speedway 57
Challenge 5 Realms
Christmas Carol 33
CIA World Fact 39
CIA World Fact M/M 42
Clipart Goliath 30
Conan Cimerion 36
Corel Draw Upgd 139
Crossword Cracker 32
Curse of Enchantia 25[95]
Deathstar Arcade 30
Dictionaries & Lang 30
Don Quixote 33
Education Master 32
Electronic Cookbook 75
Elect. Home Library 49
Elctrn Trayeler Cal 33
Encarta Encyclpd 249[95]
European Monarchs 49
Family Doctor 59
Font Master 39
Food Analyst 49
Fresh Arte 49
Front Page News 29
G Force 19[95]
Game Master 32
Game Pack 2 39
Gettysburg MM Hist 43
Goler Wrinkles Adv 33
Golden Immortal 20
Great Cities Vol 1 49
Guinness Book Rec 50
Guy Spy 32
Ham Call 49
Inspector Gadget 37[95]
Interactive Old Test 52
Interactive Storytime 45
Intl Bus & Econ Atlas 39
Intro Games Fr/Sp 79
Jazz Multimedia Hist 69
Jets & Props 55
Jones in Fast Lane 33
Just Grandma & Me 30
Jutland 54[95]
Kings Quest 5 42
Land Of Lore 34[95]
Languages of World 99
Learn to Speak Span 59
Leisure Suit Larry 42
Libry of Art:Renaisn 65
Libry of Art:Overview 65
Library of Future 99
Loom 39
Lovely Ladies II 49
Macmillan Child Dict 49
Manhole 49
Magazine Rack 45
Mantis 45[95]
Marketing Master 39
Mavis Beacon 36
Mixed Up Mothr Gse 37
Monarch Notes 75
Monkey Island 30
M S DOS Archives 35
MM Music: Mozart 33
MM Music: Vivaldi 33
North Amer Fax Bk 55
North Amer Indians 57
Officers Bookcase 50
Our Solar System 29
PC Game Room 49
Peter & Wolf 45
Pool Shark 19[95]
Presidnctl Sirt Geo 105
Programmers ROM 59
Publish It! 69
Reference Library 59
Rotor/Airball/Time 35
San Diego Zoo 49
Secret Weapons 59
Seventh Guest 59
Sherlock Holms 39
Sherl Holmes 2 42
Sleeping Beauty 37
Sound Works 35
Space Quest 4 37
Space Series Apollo 49
Spirit of Excalibur 37
Stellar 7 37
Strange Bedfellows 39
Star Child 33
Star Trek Enhanced 49
Street Atlas 59
Talking Classic Tale 17
Talking Jungle Safari 75
Time Mag Amanac 49
Time Table Science 59
Too Many Typetons 35
Ultima 1-6 49
Ultimate Shareware 59
U S Atlas 42
US Atlas w/Automap 49
US History 39
US Presidents 49
USA State Fact Bk 45
USA Wars:Civil War 49
USA Wars:Korea 49
USA Wars:Vietnam 49
USA Wars: WW II 49
Voyage Planet I-3ea. 69
White Horse Child 33
Who Killed Sam Rup 25
Willy Beamish 37
Win CD 32
Wing Comm & Miss 45
Wing Com/Ultima 6 45
Wing Comm 2 57
W C 2/Ult Undrwld 57
World Atlas 42
Addons Only Must be 21
Animation Fantasy 65
PC Pix Vol 1 or 2 65
Private Collection 65
Priv. Pictures 1 or 2 65
Speedy Vol 1-7 ea. 65
Storm 1 or 2 65
Visual Fantasy 65
Volcano 65
Caddies 7.95oo. 3/$ 19

Skins & Pads

Dust Covers 15
Grounded Wrist Strap 9
Keyboard Skins 15
Static Pads
Large- System 15
Wrist Pads 9
Stax (Dust Repellent) 5
Staix Complete
Cleaning System 15

Sound Cards

Ad Lib Microchannel 69
Ad Lib Gold 1000 179
ATI Stereo F/X 109
VGA StereoF/X 1MB 369
Covox Snd Master II 45
Gravis Ultra Sound 129
Logitech Soundmn 179
Media Vision
Audio Port 139
CDPC / XL 1199[95]
Pro Audio Spec + 139
M.M. Upgrade Kit 765
Pro Audio Spec 16 194
Pro 16 Multimedia
Upgrade Kit 955
Thunderboard 95
Thunder & Lighting 229
Sound Blaster 99
Snd Blast Pro MCA 259
Sound Blaster Pro 189
S B Pro 16 239
S B Multimedia Kit 569
S B MM Starter Kit 459
S B CDROM Intrnl 360
Sound Machine Incl.
SB Speaker Joystick 95
Roland SCC-1 GS 375
Sound Canvas 559
Roland MA-12C ea 105
SPEAKERS Shielded 20
w/ 3 band Equalizer 45
Altec Lansing 200 219
ACS 300 w/Subwfr 299

MIDI Interface

Master 101 Serial 95
PC Midi Card 79
MQX-32 179
MPU-IPC 135
Cakewalk Apprentic 145
The Miracle 325

MIDI Software

Ez Sc 129
Band in a Box 69
Cadenza 129
Cakewalk 95
Cakewalk Pro 169
Cakewalk Window 240
Encore 379
Piano Works 95
Play it by Ear 89
Master Tracks Pro 249
Midisoft Studio 159
Music Bytes Vol 1 85
Music Mentor 79
Music Printer Plus 419
Music Time 169
Musicator 375
Quick Score Delux 99
Rhythm Ace 69
Songwright 5 65
Trax for Windows 60

Joysticks

CH Flightstick 37
CH Game Card 3 31
CH Mach 3 31
CH Virtual Pilot 65
CH Virtual Pilot Pro 84
Gamestor Game Cd 26
Gravis Analog Pro 39
Gravis Joystick 32
Gravis PC GamePad 21
Kraft KC3 Joystick 18
Kraft Thunderstick 28
Maxx Flight Yoke 89
Maxx Pedal 39
Mouse Yoke 29[95]
Quickshot Game Cd 14
Quickshot Warrior 18
Thrustmaster Flight 89
Thrustmaster Pro 109
Weapons Control 79
Thrustmaster Pad 109

Hours M-F 9AM to 8PM Sat 10AM to 3PM
Store Hours M-F 9AM to 6PM Sat 10AM to 3PM
Store 1060 Randolph Ave Rahway N.J 07065

TERMS AND CONDITIONS

Master Card,Visa American Express & Discover Accepted. No Surcharge on Credit Cards. By mail: P.O. Box 3, Carteret, N.J. 07008. All Sales Are Final. NO REFUNDS! Exchange on defective merchandise with the same item only. No exceptions. All Products are new. We do not guarantee compatability. Shipping charges: 48 contiguous states, $4 per order. Alaska, Hawaii, and Puerto Rico $10 1st pc., $1 ea add. APO/FPO and P.O. Boxes $6 1st pc. $1 ea. add. Canada $8 1st pc. $1 ea.add. Heavier items extra. Foreign orders call for shipping charges N.J Residents add sales tax. Call for current price and availability. GOVERNMENT AND SCHOOL P.O.'s WELCOMED. *Quantities are limited on this item. For your protection, we will only ship to the address the credit card company has on file. 20% restocking fee on all refused items

A Scenario Disk for *The Perfect General*

by Richard Savage

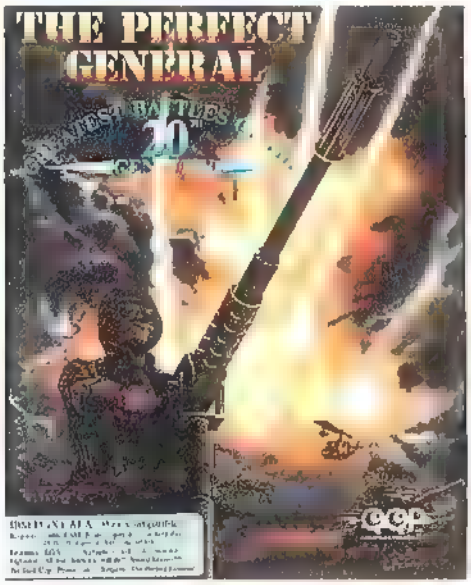
The Perfect General has remained on the Top 10 Wargames charts for quite a while. Now, it has spawned its second sequel, *Greatest Battles of the 20th Century* (hereafter *GB20*). *GB20* contains 20 new scenarios to further stretch the tactical imaginations of hard-core perfect generals, spanning WWII, Korea, Vietnam, and a few hypothetical "what-if" scenarios. These range from the conventional WWIII type, where the Russians attack in Europe, to the more bizarre, such as the Japanese attacking Hollywood (figuratively, perhaps not so bizarre) and finally, Ross Perot getting elected president and invading Libya! As you can see, there's something for everyone here!

The 20 new scenarios included in GB20

1967 Suez Conflict
1973 Suez Conflict
Kursk (Battle of all time)
The Moscow Push
Sta lngrad (Battle over a dead town)
Long Binh Inferno
Malta
Crete
Falklands Victory
Operation Sea Lion
Inchon
Pusan Perimeter
Saigon
Bataan
Fulda
Dnepr Bridgehead
Guderian Forward
Shenyang
Line of the Kill
Hollywood Dream

The game offers a broad range of conflicts. Five of them are about the Russian front in WWII, one of my favorite theaters of war. Vietnam and Korea have finally made the list, along with only one WWII Pacific theater battle, Bataan. There are two covering the Arab-Israeli wars, and the aforementioned "what-if" scenarios. All in all, there is a lot of good modem-gaming ahead for those who already own *The Perfect General*.

Unfortunately, modem-gaming is the only way to play these scenarios and derive any satisfaction from them. I had hoped that, by the third installment of this game, QQP would have improved the notoriously abysmal artificial intelligence. Sadly, the only difference I could find was that the computer now uses more heavy tanks, obviously in an attempt to compensate for lack of tactics. "Better AI through superior firepower" must have been the motto used when creating these scenarios. At first, it was amusing to motor up to a victory point city with an armored car, infantry aboard, and find a monstrous heavy tank inside the town, soon reducing the armored car and infantry to a pile of smoldering junk. Once this tactic was discovered, however, I soon learned to fool the computer into wasting its firepower on other targets, or I

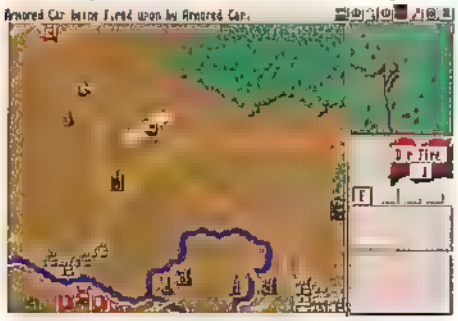


TITLE:	The Perfect General: Greatest Battles of the 20th Century
SYSTEM:	IBM ownership of *The Perfect General* required
GRAPHICS:	EGA or VGA
PLAYERS:	1-2 (modem to modem)
PRICE:	$29.95
PROTECTION:	Documentation Lookup
DESIGNER:	Bill Sarubi
PUBLISHER:	Quantum Quality Productions Flemington, NJ (908) 788-2799

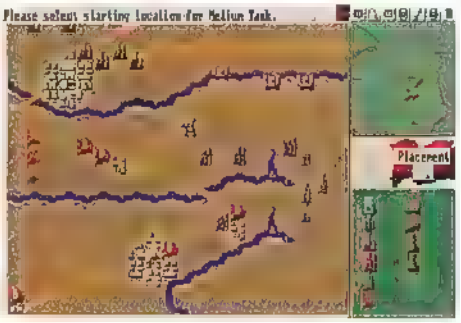
simply used artillery to pulverize the town before cruising in.

The computer does seem to try, but with sometimes hilarious results. If one puts a mine in front of a bridge, the computer will try to hit the mine with artillery to neutralize it. Unfortunately, the computer also seems to take out its own mines when they're in range. In one game, I watched in amazement as the computer artillery fired round after round at one of its own mines that it had set up in its initial placement. None of my units were near, so I theorized that the computer AI must have a list of artillery targets, among them mines, though it pays no attention to which side the mine belongs to!

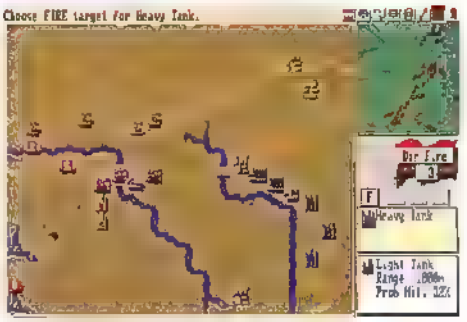
I don't want the player to come away from this review thinking that this scenario disk is bad. In spite of the dense AI, there is plenty of value here. First, Vietnam finally breaks into the *Perfect General* wargaming world. The three Vietnam scenarios are fun to play, especially "Long Binh," where the Viet Cong player has only infantry, bazooka, engineers or light artillery to choose from.



Those wargamers who want to buy a lot of panzers will relish the thought of using 325 build points as the German player in "Stalingrad," or 350 points in the "Moscow Push." Finally, there is the "big ugly brother of all panzer battles," Kursk, where the German is in mechanized nirvana with 372 build points (400 in the long scenario!).



Finally, the "what-if" scenarios provide some comic relief, and in one case, "The Hollywood Dream," a real nail-biter of a game. Previously unmentioned, but falling into this category are "Operation Sea Lion" (German invasion of Great Britain), and "Shenyang," (Soviet Union invades China). Both are a hoot, with see-saw battles that can go either way.

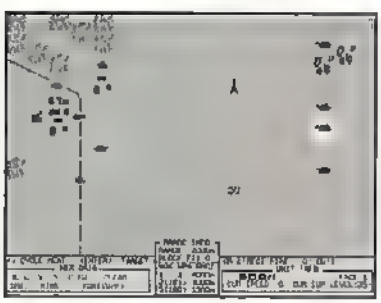


I've played *The Perfect General* and its scenarios via modem more than any wargame on the market today. The modem set-up is clean and easy, the graphics pleasant, the sound satisfying, and the interplay superb. However, it's time for this venerable warrior to get a face-lift. Rumors abound about a *Perfect General II* with much improved AI and a few much-needed new units. *[Ed: Indeed, Andrew Visscher of* Solitaire's Journey *fame is diligently working on* PGII *and we hope to see the product by Christmas of this year.]* Meanwhile, *GB20* will provide more field rations to nourish us starving grunts until that promised feast. **CGW**

The WARGAMER'S Computer Company

NEW! FROM HPS SIMULATIONS

POINT OF ATTACK



Authentic weapons capabilities with authentic combat results.

Unmatched detail down to individual rounds resolution.

Over 100 weapons from 11 nations.

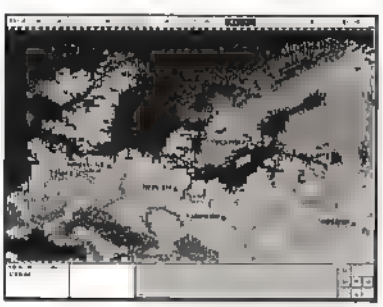
Set in the volatile Middle East, ***Point of Attack*** operates on a platoon-section level. Create custom engagements, or explore one of the five scenarios. Features night combat, adjustable weather conditions, morale and other intangible factors, advanced artillery, and lots more.

The most realistic PC tactical combat simulation available!

Requires an EGA display and at least 512K of RAM.

IBM only **$54.95**

AIDE DE CAMP



Take ANY board wargame and play it on your PC.

Play-by mail or modem.

Save floor space and playing time.

Create colorful maps, up to 30,000 hexes, by using the drawing editor to design terrain and units. Multiple user-defined zoom levels. Permanently save game set-ups as well as turns including movement and combat for later review/replay. Compatible with all game systems, theaters, scales and eras. Design your own game. Imagination is your only limit.

Requires a hard disk, VGA display, and at least 600K of RAM. Mouse optional. (Board games must be purchased separately.)

IBM only **$79.95**

Available only by mail
Please add $4.00 shipping and handling.

Mail checks/money orders to:
HPS Simulations, P.O. Box 3245
Santa Clara, CA 95055-3245

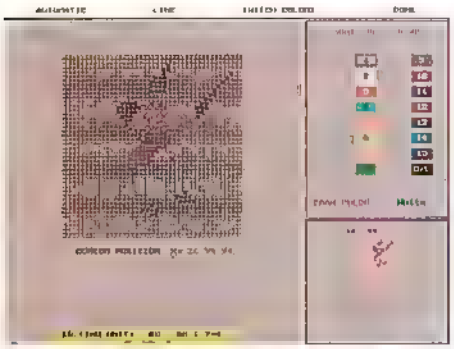
VISA/MASTERCARD CALL (408)554-8381
CA residents add state sales tax.
Please specify disk spec when ordering.

Mapping the Future

Board and Computer Wargaming Link Through *Aide de Camp*

by Alan Emrich

At the recent Computer Game Developers Conference, I sat in the wargames roundtable led by Three-Sixty Pacific's Dave Menconi (currently busy at work on Jim Dunnigan's *Victory at Sea*). The den of debaters included Sid Meier, Mark Baldwin, Bob Rakosky, Ed Bever, Thurston Searfoss, Andrew Visscher, Roger Keating and a host of other wargamers. The debate drifted over to board wargaming as the roots of computer wargaming, and how each can best borrow from the other, when Dave Menconi poised the question, "How many of you here also play board wargames?" With only a few exceptions, every hand in the room shot up. It seems as if many of us are, indeed, board wargamers under the skin.



The Bane of Board Wargaming

As many wargamers know, one of the great banes of this hobby is "landing a live one" to play against. For better or worse, much of wargaming is done solitaire. While many choose this isolationist path, I believe that most of us would prefer to challenge a wargaming friend than to play both sides of a boardgame or beat up on a predictable computer AI with regularity.

To that end, modems have linked more and more wargamers together via computer. Of course, there are those wargamers who will only stick with their boardgames and who shy away from computers. Some readers of *Computer Wargaming World* might refer to them as the Luddite Legion and mock their answer to modems: playing games by snail mail with hand written instructions being sent back and forth. Mocking their use of typewriters instead of word processors, however, only widens the gap between board and computer wargamers. If we want to broaden the wargaming experience for all of this hobby's enthusiasts, we should encourage everyone in it to be "bi" (as one California grognard wryly puts it), meaning players of both board *and* computer wargames.

Computer Wargaming 101

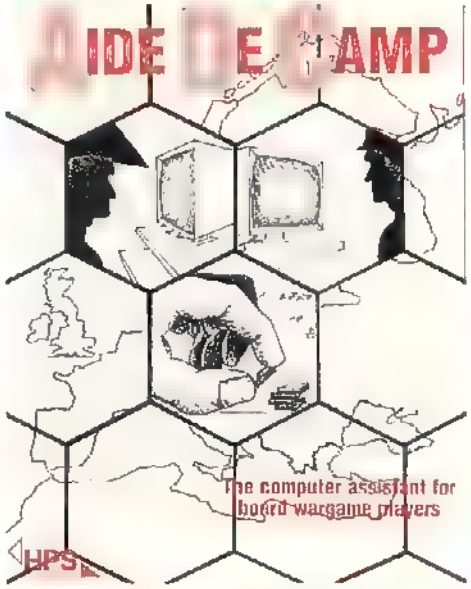
If I were trying to convince a non-computer wargamer to play a computer wargame, I'd invite him or her (yes, I know several women wargamers) over and plop them down in front of my computer rig and dazzle them. However, they haven't been excited enough yet to buy a computer *just* to use that one piece of software. Now, I think I've found the program that will get computers into the homes of my board wargaming friends.

Aide de Camp from HPS Simulations (a mom-and-pop operation featuring wargamer/computer programmer Scott Hamilton of *Point of Attack* fame) is the bridge between board and computer wargaming. It is enough of a "Holy Grail" product for board wargamers that they will actually plunk down the money for a computer. Fortunately for all parties concerned, readers of this article can sell them their old computers as the machine requirements for *Aide de Camp* are extremely modest. It requires an IBM or compatible with a 286 processor, hard drive, VGA display and at least 500K of free RAM. Even the use of a mouse is optional!

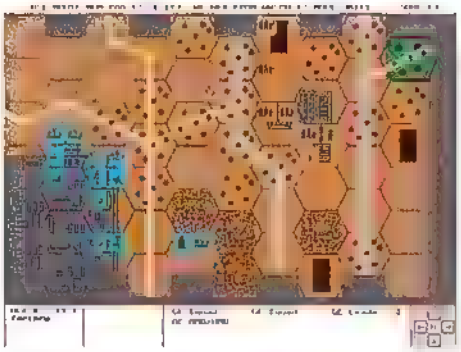
What it Isn't

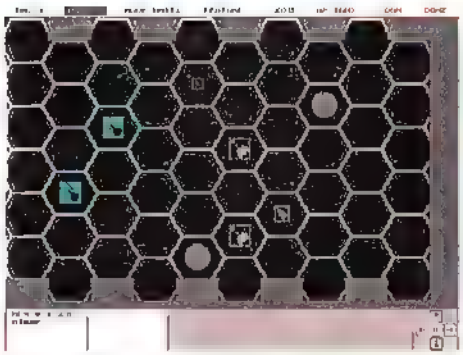
It is more proper to describe what *Aide de Camp* is as well as isn't. It isn't a game. It is a do-it-yourself wargame kit on a disk. With it, users can easily create computer versions of their favorite board wargames.

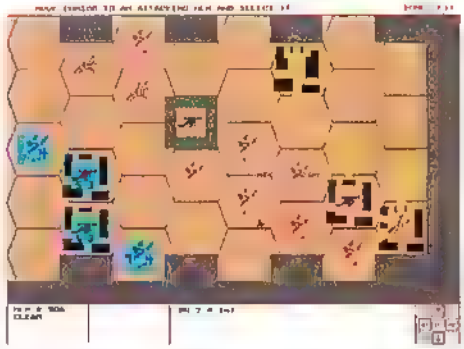
It's a snap to design board wargames with computer assistance using *Aide de Camp*, and it can be a great tool for playtesting them, too. Boardgame variant freaks like myself can enjoy the power of programming "what ifs" into their boardgaming experience using *Aide de Camp*. What if a stack of new units I just invented appeared along this road? What if these armies had met 20 miles further south? The possibilities are limitless and the tools in this program are powerful enough to deal with them all.



TITLE	Aide de Camp
SYSTEM	IBM with 286
GRAPHICS	VGA
PRICE	$79.95
DESIGNER	Scott Hamilton
PUBLISHER	HPS Simulations Santa Clara, CA (408) 554-8381







When a map and counters from a board wargame have been translated into *Aide de Camp* (or invented completely from scratch for all the wannabe wargamer designers out there), the game can be played. The action is performed in the traditional Igo Hugo (I go, you go) sequence but the program comes with no artificial opponent to play against. Instead, as one is performing their move, the game is "filmed" and saved as a file that can be transmitted either electronically via modem or through old fashioned snail mail to another wargamer who owns a copy of *Aide de Camp*. That player then reviews the opponent's last move, carefully studying the film to see that no unit exceeded its movement allowance, and the proper combat results were applied. Then, that player performs a turn, saves it, and sends the file back.

Map Maker, Map Maker, Make Me a Map

When I received *Aide de Camp*, it was a blank slate. Save for the tutorial, there was nary a map or counters available for me to slam into the disk drive and start playing. Although this may soon change as HPS Simulations nails down deals with boardgame companies to convert their products to *Aide de Camp* games, one must now create the game they wish to play before playing it.

Step one is to create a map. Both the map(s) and counters are created by way of a rudimentary paint program built into *Aide de Camp*. It is here where one notices that the interface is plainly antiquated. This keeps it consistent with the packaging, documentation, tutorial and 16-color palette which are all safely to the rear of the industry's state-of-the-art. However, I've seldom met a wargamer who was put off from playing a game that had a less-than-scintillating look to it or a slightly longer learning curve than it should in an ideal world. To the true grognard, the game is the thing and, after the time is invested in mastering *Aide de Camp*, the game rewards are there in spades.

The map is created in "hex squares." However, later revisions of *Aide de Camp* have graphically enhanced the map to lose its squarish look and take on the comfortable hexagonal-looking pattern which wargamers have come to know and love. Terrain types are defined by name, and one paints them in three different sizes. These sizes represent their presentation at the three different map display zoom levels. No values are given for terrain (such as movement and combat effects), so players will have to play honest with each other when considering terrain effects.

After terrain is placed on the map, each hex can have a secondary terrain type, objects placed there (like a town or resource or whatever one cares to create), hexsides (such as rivers) and hex-to-hex lines (such as roads) can be defined and location names can be typed in. When completed, it is easy to end up with a map that is quite pleasant to look at, especially when the counters start to dance on it.

A single game on *Aide de Camp* can be as large as 30,000 hexes, and there can be up to 10 paper maps represented on the display at once. Players of *War in Europe* or *Europa* will be happy to hear that. Even if that isn't enough, the system still makes it easy to maneuver pieces between multiple games of *ADC*. Thus, my panzer division could move from Russia to France by simply deleting it in this game and adding it to the other. It's a snap.

Counter Balance

Similarly, the counters are made up by painting them in three different levels, one for each zoom display. In addition to the counter's face, six numeric values can be typed in for every counter created. They could represent movement, combat, range, etc., and can be raised and lowered on the fly during play.

For those games where units are limited to a "force pool," that feature has been built into

QQP's Strategies of the Month Vol. 21

A monthly column to improve the quality of play

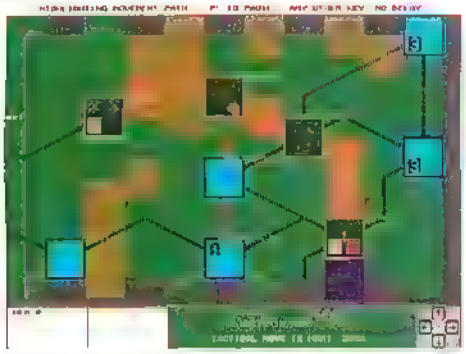
CONQUERED KINGDOMS: • Ah, those nasty little sneaks - spies! Often under-used, they can be devastating and can turn a game in your favor. Some examples: Sneak a spy into an enemy town behind enemy lines. (Obviously this has to be a town with multiple squares.) Your opponent probably has only one unit in sentry to get points. Slipping a spy into a vacant town square will not get you any points, but it will prevent your opponent from getting any either. As an example, in map #1 there is a 1000 point town. If owned by your enemy, just slip a spy in there and unless he is prudent and moves his unit around in the town each turn, he won't earn the 1000 points per turn for that town.

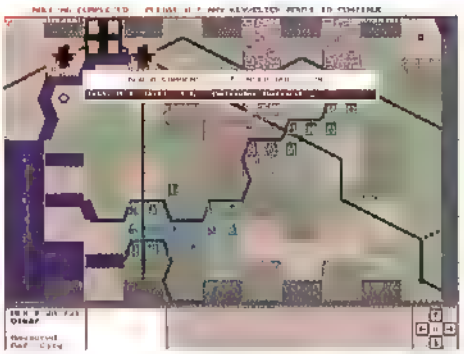
Another good way to use a spy: After turns 3 & 4 go into his hinterland. When his units that were used to secure coal, gold, and wood move off these places, you can move your spy or spies onto those empty enemy resources and secure them for yourself. It may take several turns before Mr. Opponent realizes what happened-if ever.

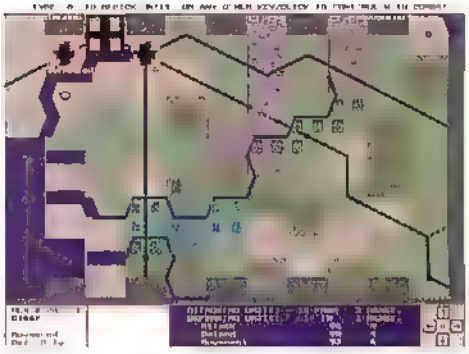
More on these little buggers next month.

SOLITAIRE'S JOURNEY • Mrs. Mop is a game that you may have to play a few times before you realize that it takes more than luck to win. One rule is not to put any kings in the two reserves. You should very rarely keep a single card in the reserves. Use these piles sparingly because it's quite simple to get caught with no possible moves.

Quantum Quality Productions
1046 River Avenue, Flemington, N. J. 08822 (908) 788-2799



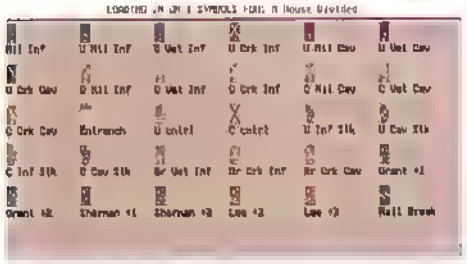




Aide de Camp as well. However, I found that when I remove a unit from the map, it doesn't return to the force pool (I have to re-add it). Aside from that nuisance, games like *Advanced Third Reich* and *War in Europe* greatly benefit from the inclusion of this feature (or, for a wild variant, it is easy to play without force pools and build unlimited quantities of whatever unit type is desired!).

Getting Around the Battlefield

Movement is usually done in tactical mode, where a unit's path is defined hex-by-hex and filmed for one's opponent to observe. Those wishing to move greater distances (by rail or sea, say) or with some trust of their adversary, can opt to move pieces by strategic movement. This mode entails picking up a unit and then seeing it teleport to its destination (thus skipping all of the intervening hexes). Strategic movement can be a real time saver.



Generally, after movement, the combat phase usually ensues. Note that it doesn't have to be that way in *Aide de Camp*. At any time, one can roll a die (or several dice — from 1-99 of from 1-99 sides each). After a die roll, it is usually a good idea to type in a comment, which can also be done at any time (they are particularly useful for explaining what one is doing after combat — i.e., retreating, taking losses, etc.). Combat is a flexible mechanism of die rolls and comments and one can easily make it work with most any combat system, even ones with multiple rounds and die rolls per round.

Sam Peckinpah, Eat Your Heart Out

For every combat result, a summary is displayed at the bottom of the screen. It shows the number of attacking and defending units plus a calculation of the various total points on each side. These totals don't take into account adjustments for supply, terrain, forts, etc. so the players will have to do that math on their own (as if we're not used to it!). After this is done, the replay shows all the moves, battles and unit actions that have occurred on the map from the time the last replay was shown. In other words, the other player's moves and combats are shown to the non-phasing player, along with results as he applied them. Watching this film of an opponent's move is an absolutely absorbing experience and one I recommend to other wargamers highly.

Cute little mnemonic devices are included in the program which remind players which units have moved and fought this turn (so one can keep from accidentally moving or fighting with the same piece more than once per turn, if that is the rule of the game being played). Like the replays, these can be cleared to conserve memory when saving the game.

Once a player's turn is done, the game is saved and the file can be transferred to the next player. Note that each participant must own a copy of *Aide de Camp* and whatever boardgame they are playing. The file size for a saved game of *A House Divided* is only about 2K. This means that wargaming by E-mail over networks such as CompuServe, GEnie and America Online can be very practical.

The Wannabe Wargame Designer's Kit

Another way to look at *Aide de Camp* is as a "creation kit" for wannabe wargame designers. With it, original maps and counters can be created, along with force pools, etc. One can then create their own rules, terrain and combat effects on paper and test the system out. If something doesn't work or playtesting discovers a change that needs to be made, it can be done simply and easily. The best part is that a would be designer can playtest his games by E-mail with interested grognards everywhere. After it is thoroughly polished, perhaps it can even be submitted for publication in print.

Dispatches from the Emperor

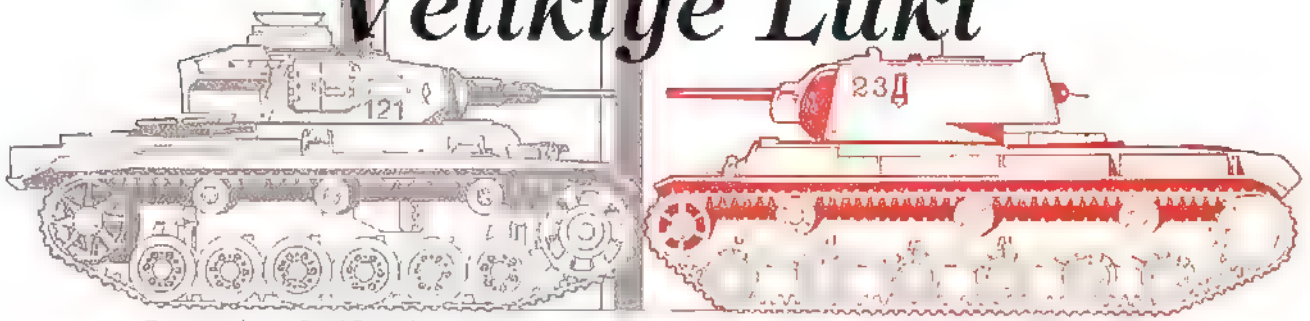
The best part is that one doesn't necessarily have to draw the maps and counters to every game they want to play using *Aide de Camp*. Not only will regular opponents divide up the work ("I'll make up the *Panzergruppe Guderian* game if you'll do *Stalingrad Pocket*"), but certain wargame companies are already joining the bandwagon and creating *Aide de Camp* PBEM disks to support their boardgames. As I write this, I know that The Gamers has signed on and several others are nearly aboard.

Keep in mind that this program is *not* for beginners. There is a high learning curve involved at the outset, particularly for the graphically and artistically impaired. Those who have memorized the rules to a "monster wargame," however, should have no problem handling *Aide de Camp*.

Not only is this the kind of program that makes so much sense that one wonders why it wasn't invented before, but now that it has appeared, I predict that it will have a ***major*** impact of the board wargaming hobby. I honestly believe that *Aide de Camp* is a piece of the grognard's Holy Grail and has built a bridge that board and computer wargamers can cross freely. For any board wargamer with an IBM computer (and, preferably, a modem), *Aide de Camp* is a must have product that will change the way you play wargames.

Frankly, I'm glad to see these two sides of my wargaming hobby merging closer together. At first, some wargamers become a little bit schizophrenic when they sit down and play boardgames solitaire (by playing their best for both sides). Next, the schizophrenia continues switching between playing board and computer wargames. Now, at least, some of this is coming to a happy ending as *Aide de Camp* makes connecting up and playing electronic board wargames a reality. **CGW**

One Day In The Life Of *Velikiye Luki*



German player: Paul Saunders — *Soviet player: Michael Peck*

by Michael Peck

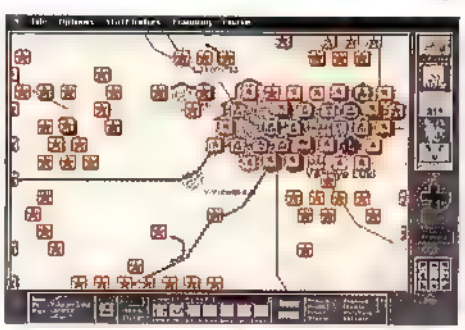
The following article is a replay of *Velikiye Luki* by Three Sixty Pacific, which covers the Soviet offensive to seize the town of Velikiye Luki in late 1942. The story begins on the opening day of the "Fortress in the Snow" scenario, in which the Germans try to punch a hole through the Russian cordon around the city before the Russians breach the city's defenses. The game was played using the optional rules for limited intelligence

Prologue

As the dawn sun shimmered off the deep white shroud that covered the Russian landscape, two fiercely determined armies prepared to race against time. After two weeks of hard combat and heavy casualties, the Soviets had seized the outskirts of Velikiye Luki, but a hard kernel of heavily fortified defenders held the center of the town. For their part, the Germans could at least breathe a sigh of relief that sufficient reinforcements had arrived to mount a counteroffensive. But they had to break through the Soviet ring before Velikiye Luki collapsed.

Turn 1 (8 a.m.)

Report of Gruppe Wohler: Our counteroffensive against the Red Army would be a tricky proposition against the numerous enemy formations. Would the superior training and organization of the Wehrmacht prevail? Gruppe Wohler faced two major problems. First, many units were of mediocre quality, and they would be quickly spent in an offensive thrust. Second, the usual logistical shoestring meant only a handful of troops could be given attack supply over a sustained period. Accordingly, the hard-hitting 8th Panzer and 20th Motorized were given offensive supply (supply allocations can radically boost or slash a unit's combat and morale ratings). The remaining units were given defensive supply, sufficient to hold the line but not undertake any serious attacks. Many units spent the morning moving into attack positions (In *Velikiye Luki*, combat occurs before movement). The initial attacks went well. The Russian infantry in the center were blitzed by a panzer/infantry attack well supported by artillery.



Report of 3rd Shock Army: Given the strong Fascist relief forces lurking near the city, we decided to give priority to the assault on Velikiye Luki. But combat the previous day had left many of the besieging forces tired and disorganized. Consequently attack supply was given to 46th Guards Rifle and a supporting tank brigade. All other formations were given defensive supply. The attack against Velikiye Luki was disappointing. 46th Guards concentrated all artillery, tank and engineer assets against a single fort defended by two strongly entrenched artillery battalions. Despite the heavy firepower, the Nazis still refused to retreat. Clearly bunker-busting is a slow business.

Turn 2 (12 p.m.)

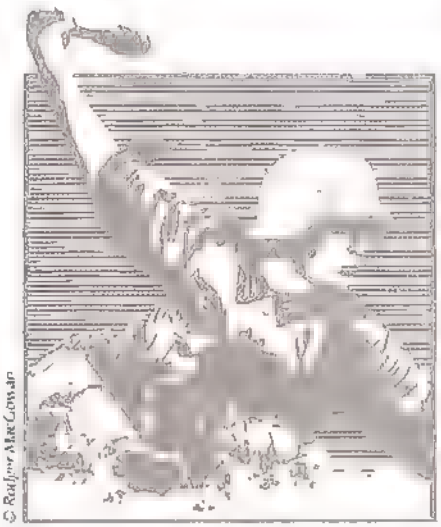
Gruppe Wohler: Now the assault gained momentum. Again, 8th Panzer and 20th Motorized push on. Contact was made with a Soviet ski brigade in the north. Now the mysterious red stars on our situation map began to resolve into tank and infantry symbols. The enemy seemed to be thickly clustered along the railroad into Velikiye Luki.

3rd Shock Army: Again, the Velikiye Luki defenders held out against all-out assaults by 46th Guards Rifle. But reports indicated the enemy suffered heavy losses; surely a couple of artillery battalions cannot withstand the assault of a reinforced Guards division. Meanwhile, the enemy relief effort became worrisome. Reconnaissance reports showed German troops massing along the rail in the center. Divisional and corps engineers were dispatched to build entrenchments as a fall back line along the railroad.

Turn 3 (4 p.m.)

Gruppe Wohler: Daylight faded but the fighting did not. Night combat was tiring, but with two-thirds of each December day cloaked in darkness, pure daytime assaults were luxuries the attacker couldn't afford. Propelled by discipline and Benzedrine, we continued to punch into the Soviet lines. Although our artillery was less effective at night, Soviet defensive artillery was totally ineffective. If only we had just one more panzer division, we would already be in the streets of Velikiye Luki. Unfortunately, the bulk of our infantry continued to merely screen the enemy positions.

3rd Shock Army: The Velikiye Luki attack forces rested this turn in preparation for a major assault later than night. A tired regiment of 46th Guards was replaced by fresh, full-strength battalions. That illustrated the importance of keeping a reserve; attacking with all your troops only means all your troops will exhaust themselves at the same time. Along the main front, the Germans continued their push along the railway line into Velikiye Luki. In the snowy, trackless wilderness, the railway is the best road around, and the village of Chernezent stood in the center of it. We garrisoned this village with a tank and infantry battalion backed by anti-tank guns. Meanwhile, a tank brigade was moved up to hold the village of Glazny in the north (in deep snow, villages are about the only defensive terrain visible on the map).



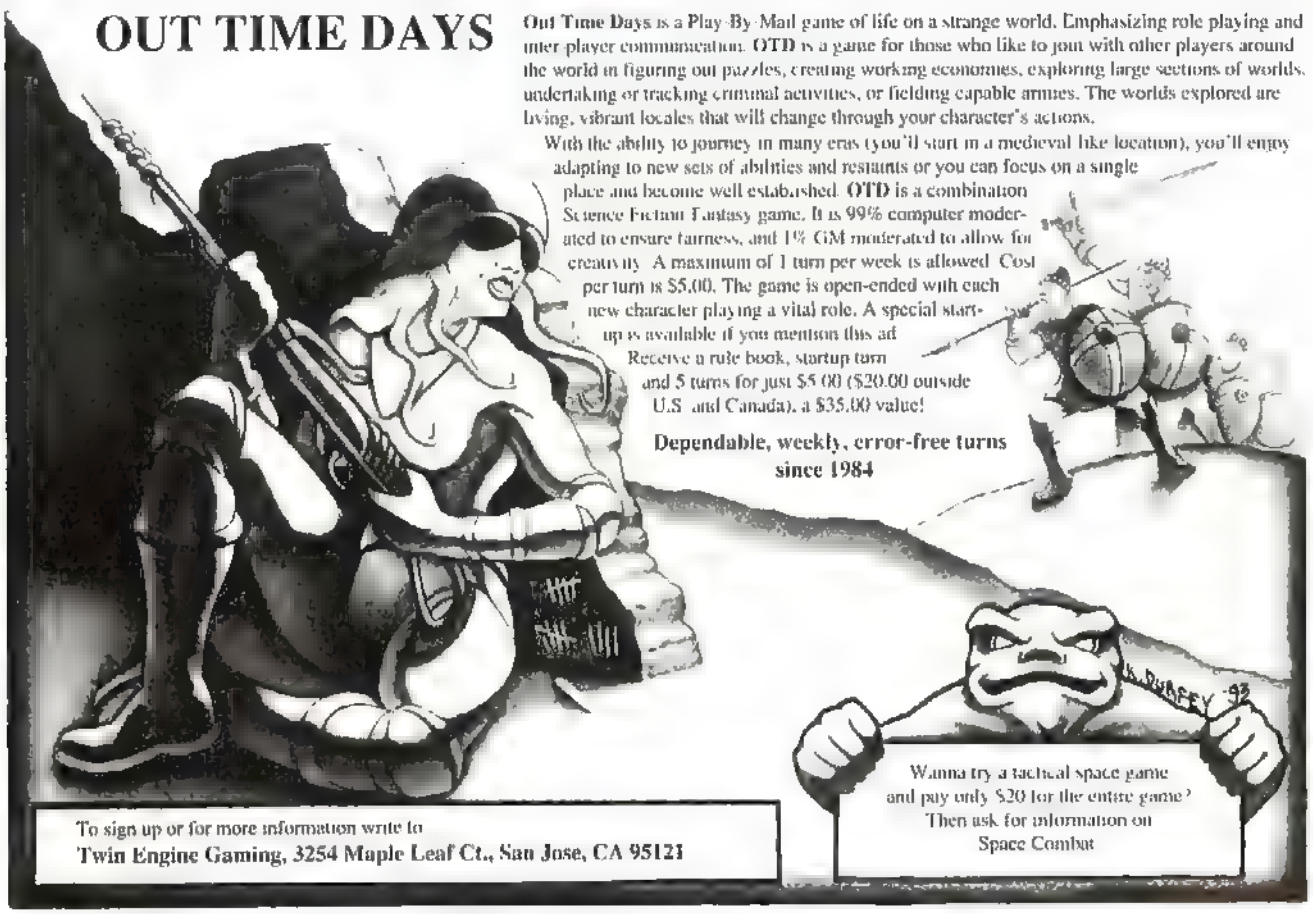
Turn 4 (8 p.m.)

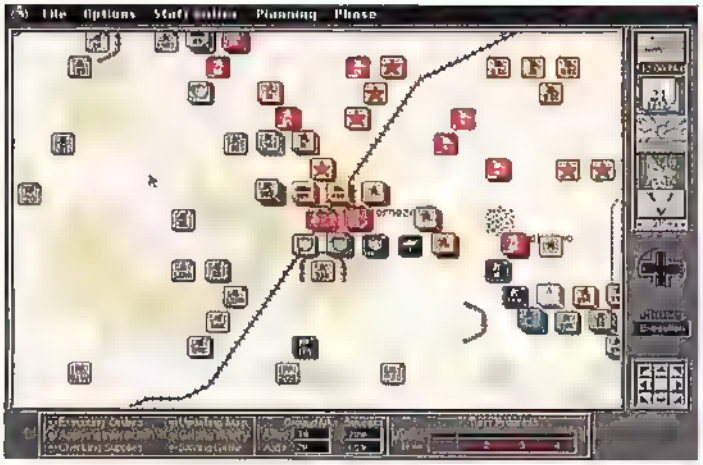
Gruppe Wohler: According to the reports — heavy combat and mixed results. In the north, a long-shot attack by a single panzer-grenadier battalion from 8th Panzer against a Soviet tank unit in Glazny succeeded. Even village walls and armor plate were no match for an assault by high-morale troops. Other attacks in the center chewed up more Soviet battalions. An attack by 20th Motorized against Chernezent failed.

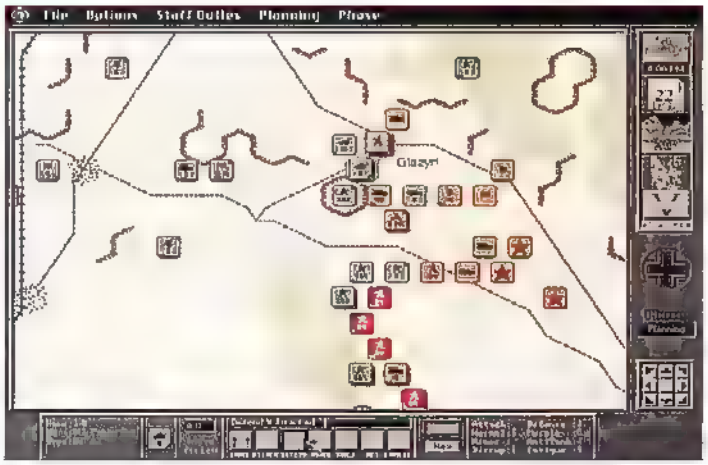
3rd Shock Army: Disaster at Glazny. A tank battalion had entered the village earlier in the evening and should have been able to withstand an attack by a single enemy battalion. The commissars needed to create better morale! German attacks along the rest of the front were starting to bleed our front line troops. Chernezent held, though the defenses have been reduced to a skeleton battery of anti-tank guns. Even when we won a skirmish, we still seemed to suffer heavier losses than the enemy. In the north, the HQ and supply depot of a ski brigade were overrun. Tonight the Nazis will celebrate on vodka. Fortunately, another 46th Guards attack on Velikiye Luki eliminated one of the two enemy artillery units holding the fort.

Turn 5 (12 a.m.)

3rd Shock Army: Don't the Germans ever sleep! The last defenders of Chernezent were wiped out, but, strangely, the Germans did not occupy the village. Fortunately, some field fortifications had been set up behind the village as an anchor point. An attack by a full tank brigade against Glazny failed miserably; their commander blamed it on insufficient supply. However, the main problem is that our brigades could only attack individually, and lack proper infantry and artillery support. On the other hand, there was rejoicing around Velikiye Luki that night; after a whole day and night 46th







Guards finally captured the strongpoint. But there were still nearly a dozen more to capture—truly a sobering thought.

Gruppe Wohler: Our plan to kill enemy units was succeeding handsomely — a ski brigade overrun and a tank counterattack squelched. Even though exhausted and disrupted by incessant fighting, the elite mechanized units continue to function well.

The Aftermath

By 4 a.m. the battle had petered out. The German mechanized units, maxed out in fatigue and disruption, were finally beginning to show the strain. They would have to spend the next day recuperating. Even worse, the supply situation was so bad that almost no units could be given offensive supply. Although the Soviet frontline troops had taken a drubbing, the troops around Velikiye Luki were sufficiently rested (or had been replaced by rested units) to renew the assault. Ironically, the Soviets were winning on victory points, at least after the first day of battle. Although the Germans slew hordes of Reds, the victory points were weighted towards territory (which the Soviets mostly held) as well as disproportionately penalizing Axis losses.

Lessons Learned

Velikiye Luki is a long game. Even the scenarios comprise over a hundred turns, and night can see as much combat as day. That's why supply allocation is so vital, because it effectively determines whether a unit is a killing instrument or cannon fodder for the next six turns. Both sides easily have enough supplies for defensive purposes; it's the huge logistic consumption of attack supply that's the problem. Especially for the Germans, juggling who gets what is a nerve-wracking task. No more than one or two divisions can be given attack supply, and that should be for key missions, such as storming Velikiye Luki. On the other hand, though it's tempting to allocate minimal supply to a division, be careful. If by chance they are attacked, they're dead meat.

In *V for Victory: Utah Beach*, the Americans and Germans had roughly similar capabilities. In *Velikiye Luki*, the German and Soviet armies are night and day. The war in Russia was more than a conflict between opposing ideologies; it was a battle between two military systems, and *VL* shows it well. The Soviets have a huge army, but with relatively poor morale and an inflexible artillery. The Wehrmacht is a mixed bag, ranging from very high morale troops (especially the SS motorized troops) down to Luftwaffe cannon fodder.

The heart of the Wehrmacht are the high quality mechanized and SS units which carry the burden. The remainder are not much better than their Russian counterparts, and are adequate for holding the line. The Wehrmacht's deadliness is in the high morale of its elite units, often one-third higher than their Red counterparts. Players will find that numerical superiority is nice, but it's nice to get three or four odds shifts for superior morale. The Germans' excellent artillery is another major advantage. German players who were kicked around by American firepower at Utah Beach will enjoy socking it to their Bolshevik opponents. German artillery can be used on-call rather than being pre-allocated, and is more effective at night than Soviet guns. Like a fast boxer the Germans can make narrow but sharp jabs all over their opponent until he finally weakens.

The Soviets, on the other hand, have a plethora of essentially mediocre units. Even the Guards divisions pale beside 8th Panzer or 20th Motorized. Their assaults must be either probes or all-out blood baths, and their defensive options are basically limited to stand and die. Similarly, while 3rd Shock Army has a great deal of artillery, most of it is low-value divisional pieces. It's the rocket batteries and heavy howitzers that are the cutting edge, and they're needed to subdue Velikiye Luki. A major problem is that combat losses are expressed in percentages, so even if a horde of Soviet battalions defeat a small but high-morale German unit, the morale shifts mean the Soviets will probably suffer more losses than their opponents. Red players can only clutch their heads as high odds attacks are whittled into nothing by terrain and odds shifts. And playing with the one division or brigade per attack rule adds to the frustration, because the array of Soviet independent tank and infantry brigades are individually weak.

In general, the best strategy is to pick one or two divisions and give them decent supply. Then make a few high-odds attacks rather than exhaust all your units with attacks up and down the line. Because combat (and moving at night) cause fatigue, reserve regiments are vital. Take full advantage of the cross-attaching feature; reinforce assault divisions with extra artillery and especially tanks.

The siege is a separate game in itself, and to call it frustrating is an understatement. In the replay, it took a whole day just to take a strongpoint guarded by two weak artillery battalions. Even the weakest German units can get six odds shifts for morale and terrain, and the deluge of Soviet shellfire is muted by urban cover. The only way is to whittle down the defenders by repeated attacks. When a division or regiment is worn out, pull it out and replace it with another. *Velikiye Luki* is a grinding match, and who grinds most wins. CGW

The More The Harrier

Climbing Aboard MicroProse U.K.'s *Jump Jet*

by Paul Rigby

The Harrier, with its complex flight models and unique military role, has been under-represented in computer simulations. Suddenly, like salespeople on the scent of money, several versions are showing up at once. One has already been released by Domark, while another is the subject of this review. Named *Jump Jet* (*JJ*), this is the latest flight sim to be designed by Microprose UK.

In *JJ* one flies either an RAF GR5/7 or a USMC AV8B through day and night missions in practice flights, single sorties, a single day's worth of flying in any arena (to a maximum of eight missions) or one of three campaigns. Campaigns can be conducted in the Falkland Islands, Hong Kong or Nordkapp for up to 10 days. Upon completing a mission on any one day, the player is provided with an update of his side's progress.

A word about the choice of Hong Kong as a potential flashpoint is necessary here. This was an inspired selection by MicroProse U.K., especially in light of present-day tensions between the U.K. and China over the status of the U.K. "colony." Of all the campaigns offered, Hong Kong offers the most imaginative arena. For example, one will observe a wide variety of esoteric aircraft, including the Jian-6 (the Chinese MiG-19) and the Shenyang J-8 "Finback."

Realism takes a backseat on many occasions, though. For example, flying in the Falklands, one might be asked to strike against an Argentine aircraft carrier based off the north shore of the Islands. Of course, this never happened in the actual conflict as the Argentine Navy refused to get out of bed post-Belgrano. However, as a game, it does spice things up a little.

Missions do not require long flight times because the player is based in a Hide. Hides are, of course, forward air bases which can be ... well, *hidden* (situated amongst a cluster of trees, for example). Thus, the action is forever available on the player's doorstep whenever one is ready to blitz into combat mode.

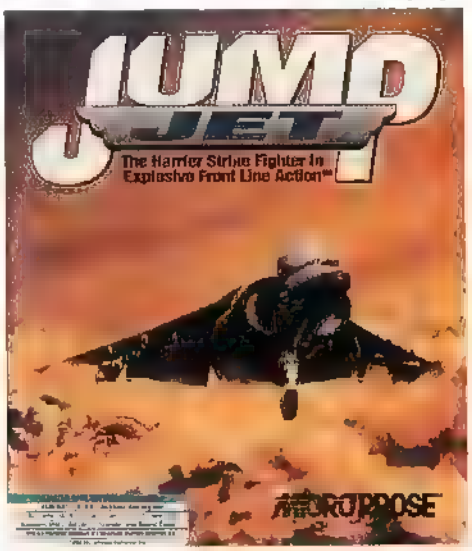
As with most MicroProse simulations, the player can alter the difficulty and realism of a number of factors such as the flight model or the enemy. Other pre-mission factors include reviewing pre-selected waypoints on the tac rical map, reviewing pre-selected targets, selecting one's armament and reviewing orders. Then, it's into the cockpit and away, from either a carrier or ground base.

The flight model appears to encompass most of the aircraft's actual characteristics, and meets all of the basic aeronautical demands. The stall model and the conversion from vertical to horizontal flight is competent, with reference points remaining constant during the process. In addition, the player is given a choice of HUDs for Nav, V/STOL and Attack. An example of *JJ*'s realistic HUD can be observed when the jet is pulled up towards vertical. The HUD ladder bars then dip down and point in the middle towards the horizon, so that it is much easier to keep oriented at any time. This feature is portrayed well in the game. However, the HUD itself appears oversized.

Microprose UK has developed a new graphic engine especially for *JJ*. It is a fractal-based landscape similar to *Midwinter 2*, but is "gouraud shaded" so that the scenery appears very smooth. Gouraud shading actually takes the individual polygons and smooths them out. The result is a virtually seamless landscape. On occasion, though, one can see the landscape being built, which doesn't help one's "suspension of disbelief" at all. The technique enables players to fly *down* valleys rather than over them, offering a tremendous visual experience. This scenic structure also yields some added tactical enhancements, enabling enemy concealment on a hillside or, more alarmingly, just around the next corner.

From here on in, *JJ* begins to rack up disappointments. A little background is in order. Throughout the game's development, MicroProse U.K. has boasted about the game's graphics and, more pertinently, its realism. Many times project managers and designers on the game have mentioned RAF Wittering (a UK, GR5 base) to recognize help and advice they received for improving the flight model and making it more realistic. The company also identified a number of advanced features that were targeted for *JJ* (see below for details) that never appeared in the final game. *JJ* cannot, therefore, be viewed as an action or "fun" game like Novalogic's *Comanche: Maximum Overkill* or an abstract tactical game like *ATAC*. Apart from heady statements of realism quoted in the manual, the company has marketed the game into the realm of realistic flight sims. "You'll never get closer to the real thing," exclaims the box cover. This is the territory occupied by the *Falcon 3.0*s and *Aces of the Pacifics* of this world.

With this in mind *JJ* immediately falls between two schools. Yes, the core flight model and in-flight operations appear to model the real thing quite well. They do not go to *Falcon 3.0* extremes, but, on the whole, the effect is admirable. However, the real bummer is the campaign, the core of any flight simulation. Basically, MicroProse U.K. has taken a decent flight model, some fancy graphics and planted it onto an old-fashioned campaign structure derived from *F-19*. Witness the campaign



TITLE:	Jump Jet
SYSTEM:	IBM (286/16 or better with at least 1 MB RAM, DOS 5.0 or greater, hard disk required)
PRICE:	$69.95
DESIGNER:	Mike Branton, Kristian Ramsey-Jones and Tim
PUBLISHER:	MicroProse Hunt Valley, MD (410) 771-1151

COBRA MISSION

The sexy role-playing adventure game

You stumble back to your office after a long, hard day of detective work. You can't wait to get cozy with a bottle of whiskey, but your answering machine has an urgent message. This is a life and death emergency. Women are disappearing. Donna's missing. Please, come quickly. Donna's rescue is only the beginning of an adventure that indulges your wildest fantasies as it plunges you into fun and danger. While on screen you're dazzled by innov

WANTED: Private Investigator to Rescue Desperate Beauty.

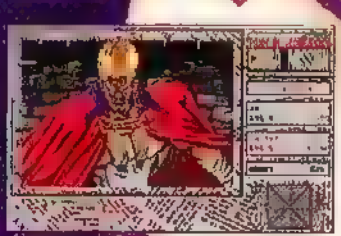
ave and original Japanese animation that's taking other countries by storm, and is now available in the U.S.

"Cobra Mission is unique."
Computer Game Review

"...quite an original."
Strategy Plus

"I have to admit I enjoyed it."
Game Bytes

Available now at your nearest dealer or call 1-800-258-MEGA. Or write: Megatech, P.O. Box 11333, Torrance, CA 90510 Visa, MasterCard, checks accepted.



System requirements: 386 or faster machine with 640K RAM, hard disk with min. 11 megabytes of available space required, mouse recommended. Graphics: compatible with EGA, MCGA and VGA (VGA highly recommended). Sound support: Sound Blaster, Thunder Board, Pro Audio Spectrum and Adlib.

R This game is not for the faint-hearted. It contains violence and some material inappropriate for minors under 18

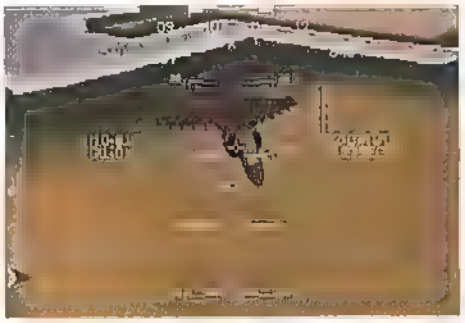
MEGATECH

Circle Reader Service #69

features: fly a set mission which has been randomly generated, fly along preset waypoints, hit a pre-set primary and secondary target, fly back to base. End of story. There are no wingmen, no interaction with one's own forces, no dynamic battlefield, no feeling of being *involved*. What is offered is another ill-conceived "You vs. The World" flight simulation that *purports* to be a realistic simulation. Instead, it is reminiscent of flight sims we thought we'd seen the last of two or three years ago.

With today's powerful hardware, I don't know why a close air support aircraft like the AV8B would be simulated without the dynamic, vibrant, unique world that the AV8B aircraft flies in (e.g., the Forward Area Battle, or FAB). It seems MicroProse U.K. has simulated dozens of aircraft and then inserted them into *JJ* — change the name and no one will know the difference. Once again, the reason is because the world that aircraft flies in is too generalized.

This isn't the only shortcoming, though. Other disappointments stem from conversations with *JJ* project managers and designers. There had been many intriguing features revealed and discussed, some in great detail, during the later stages of the game's development. Among the features missing since those conversations are "full-control" campaigns where the player would have had total control of the campaign situation. This would have involved the player flying out on recon missions to decide whether to return and destroy specific targets; being in control of one's own supplies and the essential supply routes; the use of wingmen; commanding a squadron of Harriers; integrating minor role-playing aspects into the wingmen's characters (ie: wingmen improving their skills over time); wingman fatigue; wingman interaction and so on.



Another lost promise is the on-screen cameo. For example, when a weapon is fired in most games, the player sees the projectile zooming out in front of the aircraft and that's it. Microprose U.K. discussed introducing an animated sequence at this point showing the external view of the Harrier, then the Sidewinder firing, lifting off the wing-tip and taking off.

The above abbreviated list of missing features are included as evidence of odd occurances. Some of the features, such as the cameos, were in advanced development — they were even shown to selected pilots at RAF Wittering, who reportedly liked them a lot. Their absence follows a trend that seems to happen all too frequently in today's entertainment software industry.

The clincher is that none of the features listed above have been succeeded by more advanced, more robust attributes. In fact the game has totally deteriorated from an intriguingly advanced state into a dressed up version of *F-19*. The difference between my initial previews of *JJ* and the final product are so stark as to warrant deep suspicion or, in my case, outright indictment.

Jump Jet contains much that is good. However, the praiseworthy aspects of the simulation are so much icing on a sour cake. The core of *Jump Jet* is old-fashioned and tired. After initial amazement at the beautiful seamless graphics, frustration steadily mounts as one sees how little this worthy feature is "worked' — how little *any* of the worthwhile features are used, for that matter. The result is, ultimately, boredom. Harrier devotees should take a look at Domark's *AV8B Harrier Assault* which, although flawed, contains more imagination, flair and invention than MicroProse's ornate, *Jump Jet*. CGW

Circle Reader Service #94

Create your own world in less than seven days.

Now, you can design, create and playback your own 3-D worlds faster and better than ever before! ***Virtual Reality Studio 2.0*** takes Domark's critically acclaimed 3-D graphics program to the next level with twice the control functions. Start with simple building blocks and stretch, shrink or rotate them as you like — even making them fade or become transparent. Or use the clip art library complete with its full-color catalog. Create spheres and flexicubes with a simple point-and-click of your mouse. Then copy, animate or color your 3-D shapes to your heart's content. Add the final touch with sound effects — such as the slamming of doors, whistling of wind or a drum roll!

To see your worlds unfold, use its VCR-style playback function. For example, design your dream house. Then walk through each room with doors magically opening before you!

A video cassette tutorial comes with each package to help you quickly master the incredible power of *Virtual Reality Studio 2.0*.

Visit your retailer today and create your own world for the unbelievably low price of **$99.95**!

DOMARK

1900 S. Norfolk St., Suite 202
San Mateo, CA 94403 415/513-8929

Available for IBM PC/Compatibles & Amiga

Virtual Reality Studio 2.0 *gives you unprecedented creative power. Use it for architectural* CAD, *computer game developing, prototyping machinery, creating training scenarios and other applications. The only limit is your imagination!*

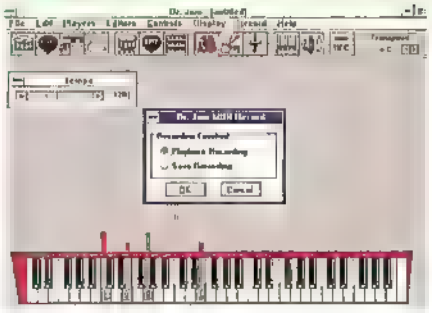
Virtual Reality Studio 2.0 is designed and programmed by Incentive Software. ©1992 New Dimension International Ltd. IBM PC screen displays shown.

Azeroth
3020 Issaquah-Pine Lake Rd., Suite 341
Issaquah, WA 98027-7255
(206) 392-9941

DR. JAM: This program artificially injects the musically impaired with a little soul. Its horde of features will have even the most tone deaf wannabe playing decent sounding stuff. One can choose from a number of pre-defined styles (i.e., country, techno-pop, reggae) and then play up to four different instruments using the keyboard. Of course, the user can twiddle with all of the elements, changing rhythm, editing drums, changing the key, instruments, chords, etc. It's loads of fun if one is so inclined, and sounds wonderful — especially with a General MIDI sound board. All of the user's creations can be recorded and saved for future play-back. If it can have us White Boys playing funky music, it can probably do wonders in the hands of someone with the slightest hint of talent. IBM ($99). Circle Reader Service #1.

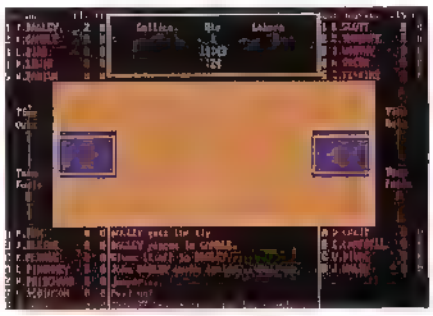
Broderbund Software
500 Redwood Blvd.
P.O. Box 6121
Novato, CA 94948-6121
(415) 382-4400

WHERE IN SPACE IS CARMEN SANDIEGO?: Apparently driven from the Earth by hordes of young sleuths, Carmen Sandiego has taken to the stars and has taken to taking stars for her prurient pleasure! Gamers ages 12 to adult once again don their ACME detective badges and blast off after Ms. Universe in an attempt to recover stolen astronomical phenomena from Carmen and her 14 VILE agents. This is definitely the most colorful and wackiest game of the Carmen line, offering 50 digitized NASA images and dozens of goofy, animated cartoons. As per Carmen's style, the game package includes a book — this time the *Peterson First Guide to Astronomy* — and an on-line database which players will scour in search of the clues needed to nab Carmen and her gang. Another option, Star Search, offers an interesting part of the game where players scroll around an actual star chart, which illustrates the major constellations. For those new to astronomy, this aspect of the game provides an excellent introduction. With its extravagant graphics and crisp user-interface, there isn't a better way to learn one's way around the solar system. IBM ($79.95). Circle Reader Service #2

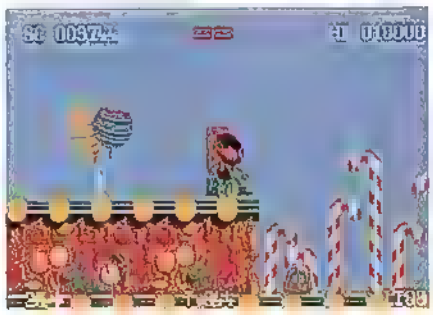


Dr. Jam

Where in Space is Carmen Sandiego?



Cactus League College and Professional Basketball



Zool-Ninja of the Nth Dimension

Putt-Putt's Fun Pack

Cactus Development Company
7113 Burnet Rd., Suite 214
Austin, TX 78757-2216
(800) 336-9444

CACTUS LEAGUE COLLEGE BASKETBALL and CACTUS LEAGUE PROFESSIONAL BASKETBALL: Anyone who is looking for a statistically accurate, up-to-date strategy game (in something of the style of XOR's old *Basketball Strategy*) would do well to consider both this product and its sister game which covers professional basketball. Whereas the old XOR game displayed numbers moving about the court, this new game puts a diamond on the court to represent the ball handler, and the diamond will change color depending upon the offensive play invoked. Gamers can customize teams, rely on the computer as coach as much or as little as they desire, and develop customized league schedules with a couple of keystrokes. Unlike Bob Chaikin's *B-Ball* and Lance Haffner's *Final Four College Basketball*, however, the emphasis is on coaching rather than controlling the flow of play through the passing. IBM ($49.95, data disks sold separately from $19.95-$24.95). Circle Reader Service #3.

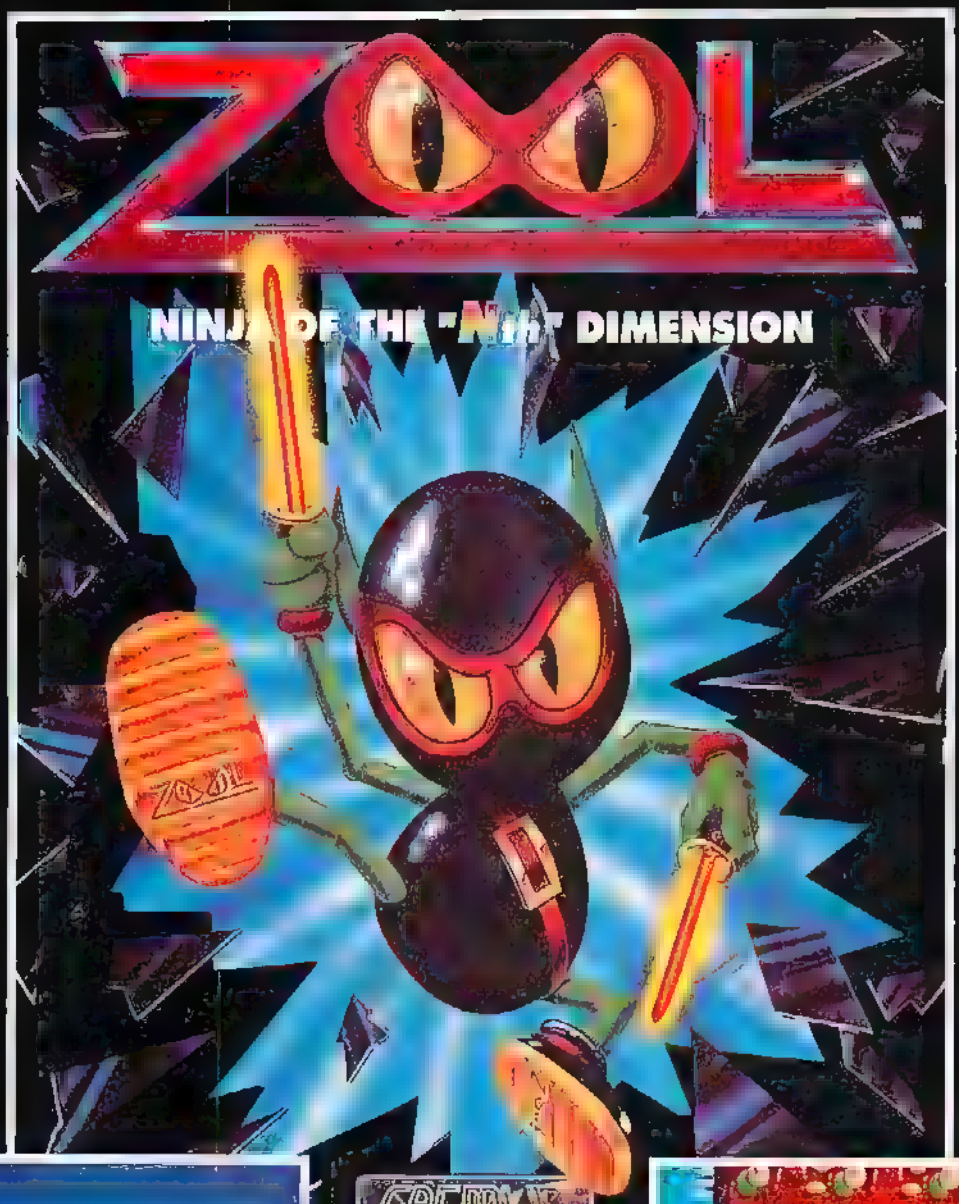
Gremlin Graphics
Carver House, 2-4 Carver St.
Sheffield S1 4FS England

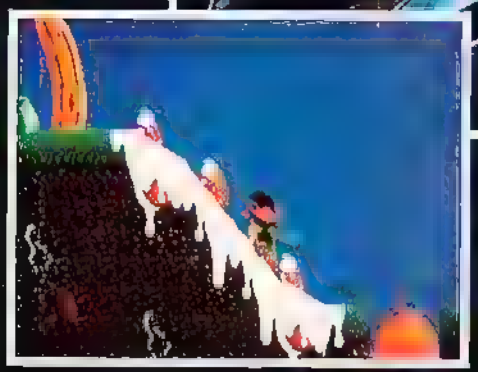
ZOOL - NINJA OF THE NTH DIMENSION: One need not have an "nth" of brain to play this twitch and reflex action game. Zool, a British patchwork of several cartridge game characters, is one bad little dude, karate chopping his way through six worlds of goodies and baddies. Once past the torturous code wheel copy protection, Fruit World, Tool World, Toy World, Fairground World, Sweet World, and Music World will test the joystick prowess of those who dare. With Pomegranate Volcanoes, self-animated Chain Saws and psychotic Violins, to name a few every-day artifacts gone bad, the Nth dimension might be a nice place to visit, but one wouldn't want to live there. IBM. Circle Reader Service #4

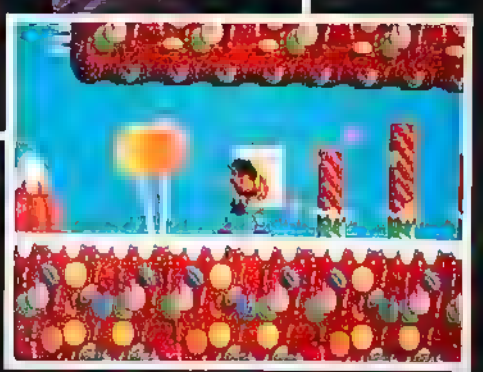
Humongous Entertainment
13110 NE 177th Pl., Box 180
Woodinville, WA 98072
(206) 485-1212

PUTT-PUTT'S FUN PACK: Here's a collection of games for the youngest ones in the family. Putt-Putt, the little car hero of *Putt-Putt Joins the Parade* (reviewed last month in this column) will take kids through six simple games adorned with speech and animated fun. There's Tic-Tac-

NOW AVAILABLE
—ON PC—







Electronic Innovative Design
768 Two Mile Parkway
Goodlettsville,Tn. 37072
Phone: 1-(615)-972-8085 • Fax: 1-(615)-851-6098

Circle Reader Service #51

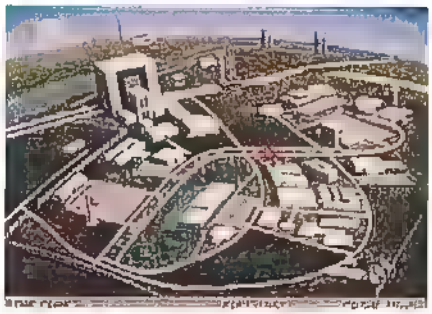
Toe, where Putt will make his moves with his antenna; Checkers, with animated pieces a la *BattleChess*; Remember!, a *Concentration*-type game; Cheese King, a hang-man variant; Pinball, which is more like a make-your-own Pachinko kit; and Blocks, where kids must spin blocks with graphics on them to form a completed picture. The package comes with a small coloring/puzzle book for when Mom and Dad want to play their grown-up games. It's all good, quick, clean fun to introduce little gamers to the family's "big person" machine. IBM, IBM CD-ROM ($39.95). Circle Reader Service #5.

Interplay Productions
17922 Fitch Ave.
Irvine, CA 92714
(800) 969-GAME

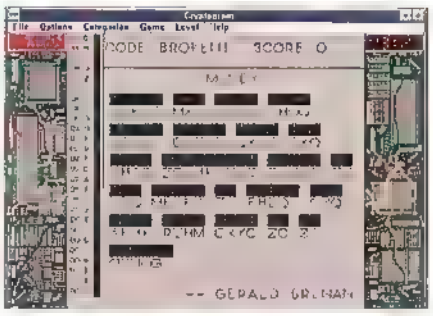
BUZZ ALDRIN'S RACE INTO SPACE: Bite the moon dust, space cadet. This detailed strategic simulation puts its players in the moon boots of the leader of the U.S. or Soviet space programs in the '50s, '60s and '70s. The player competes with another human or the computer as he or she does their part for the Cold War; illustrating their nation's ideological superiority through a demonstration of technological prowess. The player directs nearly every aspect of a space program: scheduling launches, choosing research programs, training astronauts, and tapping CIA/KGB spy information. Players run the show through a dynamic interface, laid out as a space station that changes as one's space program advances. Hundreds of digitized photos and animated clips will tell the story of the player's successes and failures. The package also contains a historical guide to space exploration lavishly illustrated with NASA photos. Educational and challenging, *Buzz* is a masterful treatment of its topic. IBM ($69.95). Circle Reader Service #6.

MicroProse
180 Lakefront Dr.
Hunt Valley, MD 21030-2245
(800) 879-PLAY

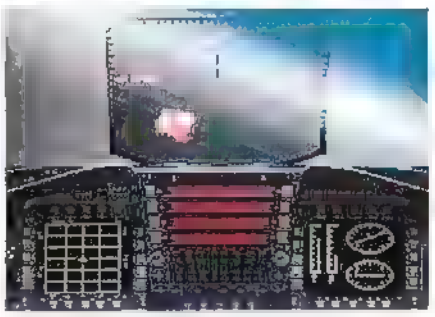
DESKTOP TOYS FOR WINDOWS: When boredom strikes, clobber bunnies with mallets over their little furry noggins. *Wallop* is one of five games on *Dr. Floyd's Desktop Toys*, a new variety pack of dubious utility. Other games include *Snark Hunt*, a find-the-furball variant; word-puzzle *Crypto Games*; *Web Spinners*, an uninvolving geometric pattern maker that is a remake of EA's original *Worms*; *Kye*, an interesting puzzle-solving game; and *Pentomino*, which will drive puzzle-lovers to distraction. The head of the Pack is Dr. Floyd, who appears at timed intervals to offer witty remarks. The program also has a calendar for keeping appointments, if bonking bunnies doesn't become an obsession. IBM with Windows ($39.95). Circle Reader Service #7.



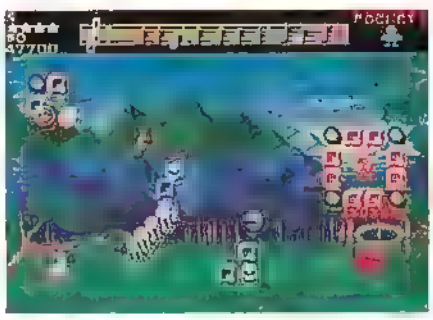
Buzz Aldrin's Race Into Space



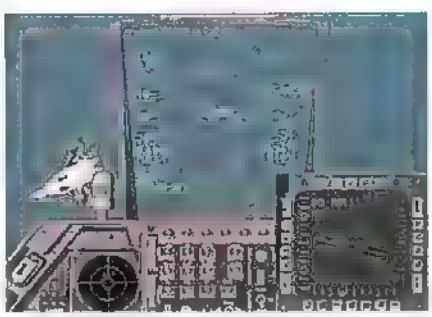
Desktop Toys for Windows



Super Strike Eagle



WizKid



Strike Commander

SUPER STRIKE EAGLE: MicroProse tries their hand at sims a-la-cartridge, and the result is about what one might expect. The game tries to be two things, both a first person combat simulation and a third person shoot'em up. Taking off from their carrier, players will fly in an overhead view toward an enemy isle blanketed with "ack-ack" sites and enemy bases. If the player's bird is intercepted by a bandit, the perspective turns to the first person, where the player does battle in a dumbed-down flight model. When over enemy bases, the view changes to "chase-plane" perspective, where the player flies over nicely textured terrain, similar to that in *Strike Commander*. The game's relationship to computer-based sims is comparable to that of *Classics Illustrated* comic books to classic novels. Super Nintendo ($69.95). Circle Reader Service #8.

Ocean of America
1855 O'Toole Ave., Suite D-102
San Jose, CA 95131
(408) 954-0201

WIZKID: This game is just plain silly. As the story goes, Wizball, Wizard and Nifta the cat had banished Zark from the land of Wiz for being naughty…Nifta had 8 kittens, and the Wizard and Wizball got married and had a kid…Wizkid. Zark came back, threw Wizard and Wizball into dungeons in his castle and put Nifta in the turtle jail…<asperated pause>…What are these people inhaling? The game is about as inane as its premise. The player controls Wizkid, a rip-off without apology of Pacman, who scoots around the screen bopping bricks and gobbling up goodies and musical notes for the "bonus tune." Uninteresting crossword puzzle variants are interspersed into the arcade action, again, leaving one wondering just what the hell these people were trying to do with the game. It's a case of strange people out-stranging themselves, to a pointless end. Amiga, IBM ($39.95). Circle Reader Service #9.

Origin Systems
12940 Research Blvd.
Austin, TX 78750
(512) 335-5200

STRIKE COMMANDER: From the darkest mists of vaporware emerges one of this hobby's most awaited games, *Strike Commander*. This flight simulator is very much *Wing Commander* meets *Falcon 3*. The cinematic storyline tells the tale of a

ZERO'S & ONE'S

SUMMER SPECIAL

YOU PAY GROUND SHIPPING, WE SHIP 2-DAY ON ALL SUMMER SOFTWARE PURCHASES*

(800) 788-2193

*Offer good only for prepaid software purchases in Continental USA for orders received during June, July or Aug, '93.

Sample Listing of Products

HARDWARE

CREATIVE LABS:

Discovery 8:CDR Drv & SB Pro&CD Sftware	388.00
Discovery 16:CDR Drv & SB16&CD Sftware	469.00
Edutainment 8 CDR Drv, SB Pro,&CD Sftware	449.00
Edutainment 16 CDR Drv, SB 16 &CD Sftware	519.00
Snd Blaster 16	218.95
Snd Blaster Pro Dlx	119.95
Video Blaster	329.95
Video Spigot	427.00

MEDIA VISION:

Fusion 16 CDRom Drv & 16 Bit Snd Cd	499.95
Pro Aud Spect 16 Snd Cd	179.95
Pro Audio Spectrum 16 MM Kit	929.95

TOSHIBA 3401 200mg

Int w/Pas Cable	499.00

AI TECH:

Pro PC/TV Plus	309.95
Pro VGA/TV Plus	839.95
Wave Watcher-TV	419.00
Video Surge	815.95

OTHER SND, MM, & VIDEO CARDS:

ATI Ultra Grph Plus w/2mb	308.00
Computer Eyes RT	434.95
Gravis Ultra Sound	138.95
TelevEyes VGA-TV	229.95
WIN TV	399.95

STICKS & YOKES

CH PRODUCTS:

Auto III Game Card	29.95
Flight Stick	35.95
Mach II	24.95
Mach III+	29.95
Virtual Pilot Yoke	62.95

GRAVIS

Analog Pro	37.95
Game Card Hi Speed	29.95

THRUSTMASTER:

ACM HiSpd Game Card	26.95
Weapons Control	72.95
U-Prom for WCS	28.95
Flight Control	59.95
Flight Control Pro	99.95
Rudder Pedals	99.95

MODEMS

Prices too Low to Print: Boca, Sportster, Supra, Zoltrix, Zoom and others

FLT SIM/WAR

A Line in Sand	26.95
Air Warrior SVGA	35.95
Ambush	41.95
Armored Fist	42.95
ATAC	34.95
B-17 Flying Fortress	41.95
Birds of Prey	31.95
Campaign	35.95
Comanche:MaximumOvrkl	43.95
Carrier Strike	41.95
Carriers at War	34.95
Conquerd Kingdoms	35.95
Conquest Japan	35.95
Empire Deluxe	35.95
F-15 Strike Eagle III	43.95
Falcon 3.0	44.95
Flight Sim 4.0	37.95
Flight Sim Add-Ons	call
Harpoon Chlgr Pak Sig Ed	47.95
Jetfighter II	39.95
Jump Jet	41.95
Liberty or Death	35.95
Lost Admiral	35.95
Megafortress Mega Pak	37.95
Pacific War	47.95
Patriot	43.95
Patton Strikes Back	14.95
Perfect General	35.95
Secret Weapons Luftwffe	29.95
Special Forces	29.95
Strike Commander	47.95
Task Force 1942	38.95
Theater of War	19.95
V Victory 1, 2, or 3 ea	43.95

ENTERTAINMENT

A-Train	41.95
ADD's	call
ADD:Unitd Adventure	31.95
Action 5-6 Sierra Gms	24.95
Adventre Starter-Sierra	19.95
Air Bucks	35.95
Alone in the Dark	35.95
Amazons	38.95
Arcade Hits	24.95
Armourgeddon	39.95
Back to Future II	26.95
Bart Simpson-Weirdnes	29.95
Batman Returns	41.95
Battch 1,2&Mechwrior	31.95
Caesar	35.95
Carmen SD-Space Deluxe	47.95
Castles II	35.95
Challenge of 5 Realms	39.95
Civilization:Master Playr	49.95
Classic Adventure-Lucas	35.95
Conquered Kingdoms	35.95
Creepers	29.95
Dagger Amon Ra	41.95
Dark Half	34.95
Dark Seed	41.95
Darklands	41.95
Daughter of Serpents	32.95
Design Your Railroad	34.95
Discovery:Columbus	35.95
Dragon Lair III	35.95
Dragon Lair:Singe's	35.95
Dune II	35.95
Dungeon Master	29.95
Fish	35.95
Elvira II	39.95
Eric The Unready	35.95
Freddy Pharkas	41.95
Global Effect	19.95
Goblins 2	24.95
Heimdall	21.95
Home Alone 2	27.95
Humans	25.95
Inca	34.95
Indy Jones 4	35.95
Kings Quest VI	44.95
Kyrandia (Legend)	34.95
LA Law	34.95
Legends Valour	37.95
Leis. Suit Larry 5	41.95
Lemmings 2	35.95
Lord of Rings:2 Towers	35.95
Lost Treas Infocom II	29.95
Lost Treas. of Rain Forest	29.95
Magic Candle III	37.95
Magnetic Scrolls	24.95
Maniac Mansion	14.95
Mantis	31.95
Mario is Missing!	34.95
Mercenaries (Tegel's)	37.95
Might & Magic IV	41.95
Monkey Island 2	25.95
Out of This World	36.95
Paladin II	35.95
Police Quest 3	39.95
Prophecy by Sierra	24.95
Populous II	37.95
Price of Persia	29.95
Quest for Glory III	41.95
Ringworld	35.95
Romance 3 Kingdoms	39.95
Rome:Pathway to Pwr	29.95
SciFi:5 Activision Games	28.95
Shadow President	41.95
Shadowlands	29.95
Sherlock Hlms:1st Files	42.95
Siege	22.95
Sim Ant	35.95
Sim City	29.95
Sim Earth	42.95
Sim Life	41.95
Simpson's Arcade	29.95
Space Quest V	41.95
Spear of Destiny:Wlfnstn	35.95
Spellcrft:Aspects Valor	35.95
Star Control II	35.95
Star Trek 25th Anniv.	35.95
Stunt Island	33.95
Terminator 2029	41.95
Ultima Underworld II	47.95
Ultima VII Part 2	45.95
Ultrabots	38.95
Veil of Darkness	35.95
Wacky Funsters	19.95
Waxworks	35.95
Wing Commander II	47.95
Wizardery VII:Crusders	41.95
X-Wing	41.95

CD ROM

7th Guest	52.95
Arthur's Teacher Trble	41.95
Chess Maniac-Nail Lamps	34.95
Composer's Qst MPC	54.95
Compton Interact. Encyc.	249.95
Compton Interact. Upgr.	99.95
Dinosaur Adventures	41.95
Eco-Quest 1	41.95
Encarta MM Encycl.	269.95
Global Explor-DeLorme	89.95
Guiness Bk MPC 1993	47.95
Inspector Gadget	35.95
King's Quest VI	41.95
Just Grandma & Me	36.95
Kodak Photo CD	29.95
Mayo Clinic (jewel box)	29.95
MS Cinemania MPC	54.95
Monarch Notes	61.95
Old Testmanet Interact	49.95
Our House-Fam Circus	41.95
Playing with Language	29.95
Prophone 1993 Ed	149.95
Putt Putt Fun Pack	26.95
Rodney's Fun Screen	39.95
Sherlock Holmes 3	43.95
Space Adventure	61.95
Space Quest IV	41.95
VGA Spectrum 1	15.00
Willy Beamish	41.95
Wing Commander II Dlx	52.95
Wing Commander II/Ultima Underworld	52.95
World Fact Book '92	59.95

WINDOWS

Alphabet Blocks	29.95
Audio:Star Trek V.I	34.95
MS Golf	42.95
Musicator GS	197.95
Origin FX Screen Svr	24.95
Spaceward Ho!	35.95
Star Trek Screen Svr	44.95
Take Break:Crossword	22.95
Uninvited	35.95
Wingsense	44.95

SPORTS

Car & Driver	37.95
Front Page Sports Fbl	41.95
Hole In One Mini. Golf	24.95
Jack Nicklaus Sig Golf	41.95
Jordan in Flight	38.95
Links 386 Pro	41.95
Mauna Kea	19.95
Banff	19.95
NFL Pro Football 1992	35.95
NFL Video Pro Football	35.95
Sports Adventure	47.95
Tony LaRussa Bsbl II	37.95
Wayne Grtzky Hocky 3	35.95
World Circuit Grnd Prix	35.95
World Tour Tennis	31.95

EDUCATIONAL

ACT Studyware	29.95
Algo-Blaster	29.95
Calculus	24.95
Castle of Dr. Brain	29.95
Dinosaur Adventure	32.95
Inspector Gadget	34.95
Island Dr. Brain	29.95
Kid Works 2	34.95
Lost Tribes (Soc. Stdy)	24.95
Mario Teacher Typing	24.95
Math Rabbit (New)	29.95
Mickey's ABC's Each.	19.95
Millie's Math House	29.95
Mystery at Museum	34.95
Operation Neptune	34.95
Oregon Trail Dlx	35.95
Playroom	29.95
Putt-Putt Fun Pak	25.95
Ready for Letters	34.95
Rock & Bach	34.95
Time Treks	35.95
Treasure Math Storm	34.95
What'sMy Angle-Geom	29.95

AND A WIDE RANGE OF OTHER PRODUCTS FROM A...TO Z...!

ALL IBM COMPATIBLE

ZERO'S & ONE'S 6472B WINDY RD. LAS VEGAS, NV 89119

ORDER: 800-788-2193 FAX: 702-897-1571 TECH/INFO: 702-897-2797 INTL: 702-897-2797

Prices and availability subject to change. All sales final. We do not guarantee compatability. All software is factory fresh and unopened. We are not responsible for manufacturer's defects. Contact publisher regarding defects. Shipping: 1st game $5; add'l games add $1 each inContinental US. 2nd Day Air $6 1st game, add'l games add $1 each in Continental US. COD add $5.00. All prices are US Dollars. WE ACCEPT M/C & VISA.

band of mercenary pilots in the early part of the next century trying to earn a profit as the world political situation continues to deteriorate. The flight graphics are stunning, but very much require 486/33+ horsepower to fully enjoy. Neither having a very sophisticated flight model, nor the kind of blistering action of *Wing Commander*, the game falls into a limbo zone somewhere in between, perhaps leaving hard core flight sim and hard core action gamers with a lukewarm feeling. IBM ($79.95). Speech Pack (sold separately), IBM ($24.95). Circle Reader Service #10.

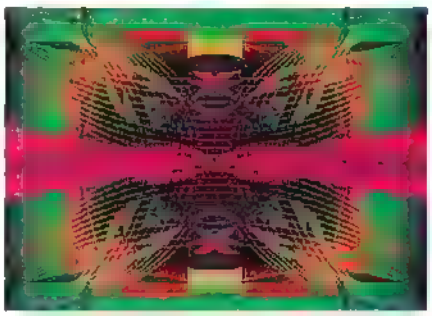
Raya Systems, Inc.
2570 West El Camino Real, Suite 309
Mountain View, CA 94040

THE AIDS AVENGER!: This action game is a platform from which to educate young and old about the Human Immunodeficiency Virus and its result, AIDS. Players take the role of AIDS Avenger as he patrols his neighborhood in search of the goblins that are spreading incorrect information about the AIDS virus, its causes and its effects. The AIDS Avenger is a thought policeman, listening in on conversations and reading people's minds, making sure they are thinking correctly. If not, he must input the correct information and then blast the goblin that was possessing the person and injecting these incorrect thoughts. There are four play levels, each escalating in the sexual explicitness of their content. Locks can be put on the levels to insure that its players are not exposed to information not befitting their age or maturity level. IBM. Circle Reader Service #11.

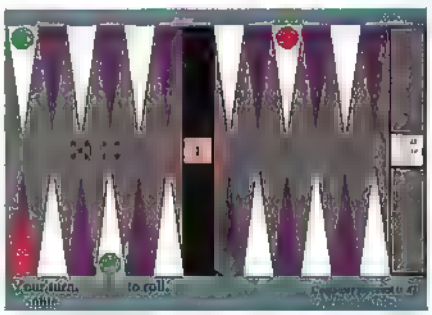
Road Scholar Software
2603 Augusta, Suite 1000
Houston, TX 77057-5618
(800) 443-7623

RAZZLE DAZZLE: Though perhaps a bit pricey for a screen saver, this is *quite* a screen saver nonetheless. The program creates incredible psychedelic images of an amazing variety. What's more, it not only works in the Windows environment, but in DOS as well. While the packaging bills it as a graphics program, in addition to being a screen-saver, this supposed additional graphics program is actually some simple configuration for the screen saver and the ability to print screen images to disk. Ever elusive "medical studies" have show this program to lower blood pressure, so it claims to have health advantages as well. In spite of the stretched marketing claims, the program is recommended for "day trippers" who enjoy wild graphic pyrotechnics. IBM ($49.95). Circle Reader Service #12.

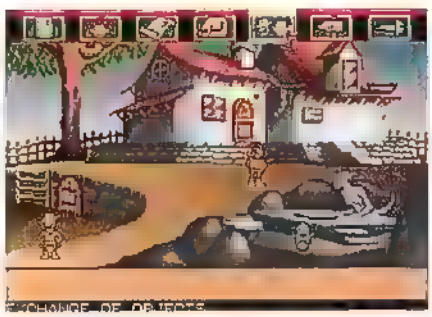
The AIDS Avenger!



Razzle Dazzle



Hyper Backgammon



Gobliins 2

Lost Secret of the Rain Forest

ROM Time
8601 Wilshire Blvd., 8th Floor
Beverly Hills, CA 90211
(800) 926-7273

HYPER BACKGAMMON: This game is a variation on the standard backgammon theme, where each player has only three stones and the game board is squeezed down to 24 "triangles." All the normal rules apply and the doubling cube is included. The package boasts that the computer opponent (no two-player option) determines the best play for over 32 million game situations. This vast database is apparently the reason why the game is published on a CD-ROM disc. This extensive artificial intelligence plays a very strong game, but, unfortunately, there are no difficulty settings offered, so the computer will trounce all but the best human players. If one doesn't mind this fact, nor care much about graphic presentation, this product will offer plenty of quick-playing challenge. IBM with CD-ROM ($39.00). Circle Reader Service #13.

Sierra On-line
P.O. Box 485
Coarsegold, CA 93614
(209) 683-4468

GOBLIINS 2: Sierra's French friends at Coktel Vision have devised two more ways to frustrate and delight puzzle game fans. Named Winkel and Fingus, these two gobliins have set out on a seven episode Gobliin Quest to rescue the king's captured heir (To heir is Gobliin, too). As in the previous *Gobliins*, players must use the individual skills of the gobliins in concert in order to bypass many fiendish puzzles. The landscapes are colorful and the animated gobliin antics even more so. *Gobliins* is a good choice for young and/or beginner puzzle lovers. IBM ($39.95). Circle Reader Service #14.

LOST SECRET OF THE RAIN FOREST: This new Sierra Discovery Series game offers a graphically rich adventure gaming environment for kids 10 and up. Its Indiana Jones meets Opie Taylor as Adam Greene, a young American boy, ventures to Iquitos, Peru, with his ecologist father to unveil The Lost Secret. However, nothing goes as planned, and soon Adam is himself lost in a lush jungle with talking animals and beautiful plants. Armed with dad's Ecorder, a device for identifying plants, animals and pollution, Adam's mission is to learn the forest's secrets, re-unite with his dad, and make it through the day without frosted Cocoa Bombs or TV. Children will love the stunning settings, and should have no trouble with Sierra's graphic interface while they try to solve

Nominees for Computer Gaming World's Games of the Year Awards

The nominees for the 1993 Computer Gaming World Game of the Year awards are:

Action

Minotaur: The Labyrinths of Crete (Bungie Software)
The Games: Summer Challenge (Accolade)
Wolfenstein 3-D (Id Software)

Adventure

Alone in the Dark (I-Motion)
Eric The Unready (Legend)
Legend of Kyrandia (Westwood)
Quest for Glory III (Sierra)
Star Control 2 (Accolade)

Role-Playing

Crusaders of the Dark Savant (Sir-Tech)
The Summoning (SSI)
Ultima Underworld II (Origin)
Veil of Darkness (SSI)
Waxworks (Accolade)

Simulation

Aces of the Pacific (Dynamix)
Comanche: Maximum Overkill (Novalogic)
F-15 Strike Eagle III (MicroProse)
Stunt Island (Disney)
X-Wing (LucasArts)
World Circuit (MicroProse)

Sports

Front Page Sports: Football (Dynamix)
Jack Nicklaus Signature Edition (Accolade)
Links 386 Pro (Access)
MicroLeague Baseball 4 (MicroLeague Sports)
Tony La Russa Baseball II (SSI)
Wayne Gretzky Hockey III (Bethesda Softworks)

Strategy

Air Bucks 1.2 (Impressions)
Caesar (Impressions)
Dune II (Virgin)
Shadow President (DC True)
SimLife (Maxis)
Utopia (Konami)

Wargame

Carriers at War (SSG)
Castles 2: Siege & Conquest (Interplay)
Conquered Kingdoms (QQP)
Empire Deluxe (New World)
Pacific War (SSI)
Seige (Mindcraft)
V for Victory: Velikye Luki (Three-Sixty)

On-Line Games

CyberStrike (GEnie/Simutronics)
Kingdom of Drakkar (MPGN)
Hundred Years War (GEnie)
Legends of Future Past (Digital Dreams)
Shadows of Yserbius (TSN/Ybarra)

The winners will be announced in October.

Advertisers List

Activision	89	Falcon Northwest	27	Paper Mayhem	127
Amtex	75	Flagship Magazine	125	Psygnosis	5
Apogee Software	51	Formgen	2	QQP	30-31, 56-57, 141
Aztech Systems	79	Gamer's Gold	100	Quarterdeck Office Systems	52-53
Bit Wit	109	Gametek	24-25	RAW Entertainment	91
Blue Valley Software	133	GEnie	37, 39, 41	Realism Entertainment	95
Broderbund	45	Genovation	96	Revell-Monogram	42-43
Cactus Development	117	Gosselin Computer	78	SDJ Entrprises	133
Cape Cod Connection	84	HPS Simulations	139	Sideline Software	121
Cerebel Info. Arts	84	Impressions	13, 15, 16-17, 19	Sierra On-Line	21, 29
Chips & Bits	63, 65, 67 69, 71, 73	Interface Dynamics	58	Simulations Canada	127
		Keyboard Commander	58	Sir Tech	3
Computer Express	60-61	Lance Haffner Games	121	Strategic Simulations	32, 35, 85
Compsult	100	Legend	163	Thalion	111
Computability	97	Liberty International	147	Three-Sixty Pacific	128-129
Creative Labs	83	Logitech	101	Thrustmaster	148
CyberDreams	115	Lucid Group	81	Twin Engine Gaming	144
Disk-Count Software	137	MPG Net	102-103	U.S. Videotel	59
Domark	149	Mallard Software	59	Viking Software	92, 93
Electronic Arts	7, 8-9	Mission Control	122-123	Virgin Games	46-47
Electronic Innov. Design	151	National Videotex	77	Zeros & Ones	153
Entertainment Software Consult.	78	Origin Systems	164		

puzzles and learn about the diversity of life. IBM ($49.95). Circle Reader Service #15.

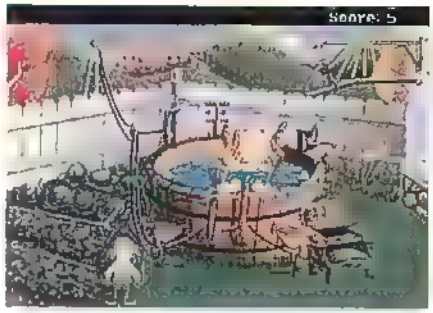
PEPPER'S ADVENTURES IN TIME: Another new product in the Discovery Series, *Pepper's Adventures* takes a young girl back in American history to fix the awful mess her whacked-out uncle caused. Pepper, accompanied by her trusty hound Lockjaw, hangs out with the colonists to find out what went wrong and who that Ben Franklin guy is. She'll be aided by a Truth Detector (would that we all were), a good wit, and a jaunty walk as she makes the puzzle-solving rounds through storybook scenery. Dialogue is decidedly contemporary as Pepper talks with characters who sound as if they're from *Bill and Ted's Excellent Adventure*. The "learning adventure" is geared towards ages eight and up, although it may be difficult for those that young. IBM ($49.95). Circle Reader Service #16.

Strategic Simulations, Inc.
675 Almanor Ave., Suite 201
Sunnyvale, CA 94086-2901
(408) 737-6800

UNLIMITED ADVENTURES: SSI has handed their world building tools to the amateur game designer with this role-playing construction kit. Now, players can create Gold Box adventures using their own designs and imported art, or can select from the many resources provided for them. To get players started, the package includes 70+ monsters, 40+ humanoid creatures, dozens of spells, plus all the tools one needs to map out entire dungeon levels and combine them into complete worlds. There are also tools for editing or creating one's own monsters, NPCs, objects, etc. When finished, the adventures can be shared or traded with friends. There are already groups of users on the major bulletin board systems that are trading art, ideas and completed levels, so there's no shortage of adventures. One might even say the supply is...unlimited. IBM, Mac ($59.95). Circle Reader Service #17.

Tsunami Media
P.O. Box 790
Coarsegold, CA 93614
(209) 683-8266

PROTOSTAR: Protostar unites many different game elements around a generic space opera theme. The humans are threatened by a hostile alien race, and the call goes out for a star captain who can rally neighboring factions around the Human flag, disrupt the alien supply lines which feed a mounting offensive, earn cash to finance the Human resistance, and battle the enemy ship-to-ship. There are elements of role-playing in the outfitting of one's ship and crew, elements of strategy in the trading of goods for cash, and elements of action gaming in the starfighter encounters. Old time gamers will perhaps see *Sundog* or *Starflight* in the game, though



Pepper's Adventures in Time

Unlimited Adventures

Protostar

Spectre Supreme

Vistapro 3.0

while graphically superior to these predecessors, it doesn't have half the interface elegance or story as either. IBM ($69.95). Circle Reader Service #18.

Velocity Development
1644 Colonial Parkway
Inverness, IL 60067
(708) 991-0594

SPECTRE SUPREME: Last month we peeked at *Spectre*, a lightning paced multiplayer shoot'em up. This month finds Velocity with an update to their original Macintosh hit. In this new version, players still scoot around poly-filled cyberspace in tanks, but many new surprises have been thrown in the pot. There are new obstacles (acid pools, ice fields, cyber-mud) and new enemies (orbiters, slicers, hunt-killers) that can now be radar or optically cloaked. Fortunately, there are new weapons to battle these new baddies, including proximity mines, smart missiles, scattershots, among others. For gamers with access to a network, the game now supports eight nodes and 16 new types of multi-player games, including team cybersports like football and soccer. The original *Spectre* was one of the best network action games around, and they've only strengthened that distinction with this upgrade. Mac ($69.95). Circle Reader Service #19.

Virtual Reality Laboratories
2341 Ganador Ct.
San Luis Obispo, CA 93401
(800) 829-VRLI

VISTAPRO 3.0: It seems the end result of the Computer Revolution will be to eliminate the need to move from one's chair. This product takes a complete tour of the world's natural wonders and drops it into one's lap. With a few menu selections one can behold the grandeur of such landscapes as the Swiss Matterhorn and the Californian Big Sur coastline on the PC screen. It's quite an amazing program, taking U.S. Geological Survey Data Elevation Maps of natural landscapes and rendering them in beautiful detail. One can even create animated "fly-throughs" of the rendered areas, so one can soar through the craters of Mars or circle the peak of Mt. Fuji. This new version adds a heap of new features, including the addition of trees, fractal cloud patterns, extended video card support, the ability to map any PCX image onto the landscape, the ability to render 24-bit images, and refined image quality menus and functions. Additionally, it offers the ability to link numerous .PCX files into a single .FLC animation. Alternatively, a large .FLC file can be broken into individual .PCX files. A powerful program for powerful-good graphic fun. Amiga ($99.95), IBM ($129.95). Circle Reader Service #20. CGW

COMPUTER GAMING WORLD HALL OF FAME

The games in *Computer Gaming World's* Hall of Fame have been highly rated by our readers over time. They have been rated for their impact on the computer gaming hobby during their peak period of influence and acceptance by our readership. Note that the dates listed for each game are the copyright dates and may precede the actual release dates. Specific formats listed are those which *CGW* has in its possession.

The Bard's Tale (Electronic Arts, 1985)
Many formats

Chessmaster (Software Toolworks, 1986)
Many formats

Dungeon Master (FTL Software, 1987)
Amiga, Atari ST, IBM

Earl Weaver Baseball (Electronic Arts, 1986)
Amiga, IBM, Macintosh

Empire (Interstel, 1978)
Amiga, Atari ST, C-64, IBM

F-19 Stealth Fighter (MicroProse, 1988)
IBM

Gettysburg: The Turning Point (Strategic Simulations, Inc., 1986)
Amiga, Apple, C-64, IBM

Gunship (MicroProse, 1989)
Amiga, C-64, IBM

Harpoon (Three-Sixty Pacific, 1989)
Amiga, IBM, Macintosh

Kampfgruppe (Strategic Simulations, Inc., 1985)
Many formats

King's Quest V (Sierra, 1990)
Amiga, IBM, CD-ROM

M-1 Tank Platoon (MicroProse, 1989)
Amiga, IBM

Mech Brigade (Strategic Simulations, Inc., 1985)
Many formats

Might & Magic (New World Computing, 1986)
Apple, C-64, IBM, Mac

M.U.L.E. (Electronic Arts, 1983)
Atari 8-bit, C-64

Pirates (MicroProse, 1987)
Many formats

Railroad Tycoon (MicroProse, 1990)
Amiga, IBM, Macintosh

Red Baron (Dynamix, 1990)
Amiga, IBM, Macintosh

SimCity (Maxis, 1987)
Many formats

Starflight (Electronic Arts, 1986)
Amiga, C-64, IBM, Mac, Sega

Their Finest Hour (LucasArts, 1989)
Amiga, Atari ST, IBM

Ultima III (Origin, 1983)
Apple, Atari ST, C-64, IBM

Ultima IV (Origin, 1985)
Amiga, Apple, Atari ST, IBM

Ultima VI (Origin, 1990)
Amiga, IBM

War in Russia (Strategic Simulations, Inc., 1984)
Apple

Wasteland (Interplay, 1986)
Apple, C-64, IBM

Wing Commander (Origin, 1991)
IBM, Sega

Wizardry (Sir-Tech Software, 1981)
Many formats

Zork (Infocom, 1981)
Many formats

King's Quest V

Sierra On-Line, 1990
Amiga, IBM, IBM CD-ROM

King's Quest V was an amazing addition to the best-selling adventure game series of all time. It was the first game in which real painted images were scanned and used as the backgrounds for the adventure, and was the first game to sport Sierra's parserless interface. Although some players were disappointed in the move to a non-typing interface and the easier puzzles that this entailed, *King's Quest V* was an important landmark in a series that has defined a genre. Indeed, it points toward the future of interactive storytelling on the computer.

M-1 Tank Platoon

MicroProse, 1989
Amiga, IBM

The first simulation to realistically depict armored warfare as platoon-oriented (both **Accolade's** *Steel Thunder* and **Electronic Arts'** *M-1 Abrams Battletank* treated the vehicles as operating independently), M-1 Tank Platoon emphasized leadership, platoon integrity, terrain effects and air support in a viable and entertaining simulation. M-1 Tank platoon not only set the standard for armored vehicle simulations, but pointed the way toward an update of MicroProse's classic *Gunship* that would emphasize platoon integrity as well.

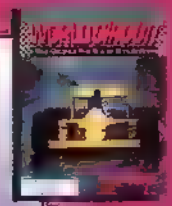
Top Adventure Games

	GAME	COMPANY	SCORE
1	Monkey Island 2: Le Chuck's	LucasArts	9.99
2	Star Control II	Accolade	9.87
3	Indiana Jones: Fate of Atlantis	LucasArts	9.84
4	The Secret of Monkey Island	LucasArts	9.72
5	Quest for Glory III	Sierra	9.56
6	Sherlock Holmes CD	ICOM	9.55
7	King's Quest V: Heir Today..	Sierra	9.50
8	Les Manly in: Lost in L.A.	Accolade	9.28
9	Lost Files of Sherlock Holmes	Electronic Arts	9.20
10	Eric the Unready	Legend	9.16

Top Role Playing Games

	GAME	COMPANY	SCORE
1	Ultima Underworld	Origin	10.45
2	Ultima Underworld II	Origin	9.87
3	Eye of the Beholder II	SSI	9.51
4	Might & Magic III	New World Computing	9.41
5	Ultima VII	Origin	9.34
6	Might & Magic: Clouds of Xeen	New World	9.34
7	Wizardry VII: Crusaders of Savant	Sir Tech	9.25
8	Eye of the Beholder	SSI	9.10
9	Bane of the Cosmic Forge	Sir-Tech	9.05
10	Ultima V	Origin	9.00

Top Simulation Games



	GAME	COMPANY	SCORE
1	World Circuit	MicroProse	10.54
2	X-Wing	LucasArts	10.26
3	Falcon 3.0	Spectrum HoloByte	9.58
4	Aces of the Pacific	Dynamix	9.56
5	Comanche: Maximum Overkill	NovaLogic	9.39
6	Secret Weapons of the Luftwaffe	LucasArts	9.27
7	Stunt Island	Disney	9.23
8	Chuck Yeager's Air Combat	Electronic Arts	9.06
9	Red Storm Rising	MicroProse	9.04
10	Silent Service II	MicroProse	9.03

Top Strategy Games

	GAME	COMPANY	SCORE
1	Civilization	MicroProse	10.71
2	Solitaire's Journey	QQP	10.26
3	Dune II	Virgin	9.61
4	The Incredible Machine	Dynamix	9.41
5	Chessmaster 3000	Software Toolworks	9.32
6	Hong Kong Mahjong Pro	Electronic Arts	9.13
7	The Lost Admiral	QQP	9.05
8	Mech Warrior	Activision	8.94
9	The Island of Dr. Brain	Sierra	8.91
10	Hoyle Book of Games, Vol. 3	Sierra	8.78

Reader Poll #106

COMPUTER GAMING WORLD
The Premier Computer Game Magazine

Top 100 Games

	Game	Company	Type	Score
1	Civilization	MicroProse	ST	10.71
2	World Circuit	MicroProse	SI	10.54
3	Links 386 Pro	Access	SP	10.51
4	Ultima Underworld	Origin	RP	10.45
5	X-Wing	LucasArts	SI	10.26
	Solitaire's Journey	QQP	ST	10.26
7	Conquered Kingdoms	QQP	WG,ST	10.25
8	Wing Commander II	Origin	AC	10.23
9	Front Page Sports Football	Dynamix	SP	10.21
10	Monkey Island 2: Le Chuck's Revenge	LucasArts	AD	9.99
11	V for Victory: Velikiye Luki	Three-Sixty	WG	9.93
12	Star Control II	Accolade	AD,AC	9.87
	Ultima Underworld II	Origin	RP	9.87
	Empire Deluxe	New World	WG	9.87
15	Indiana Jones: Fate of Atlantis	LucasArts	AD	9.84
16	The Perfect General	QQP	WG	9.75
17	The Secret of Monkey Island	LucasArts	AD	9.72
18	Wolfenstein 3-D	Id Software	AC	9.70
19	V for Victory: Utah Beach	Three-Sixty Pacific	WG	9.63
20	Dune II	Virgin	ST	9.61
21	Falcon 3.0	Spectrum HoloByte	SI	9.58
22	Quest for Glory III	Sierra	AD,RP	9.56
	Aces of the Pacific	Dynamix	SI	9.56
24	Sherlock Holmes CD	ICOM	AD	9.55
25	Pacific War	SSI	WG	9.51
	Eye of the Beholder II	SSI	RP	9.51
27	King's Quest VI: Heir Today ..	Sierra	AD	9.50
28	Links	Access	SP	9.47
29	Warlords	SSG	WG,ST	9.44
30	The Incredible Machine	Dynamix	ST	9.41
	Might & Magic III	New World Computing	RP	9.41
32	Comanche: Maximum Overkill	NovaLogic	SI	9.39
33	Hardball III	Accolade	SP	9.37
34	Might & Magic: Clouds of Xeen	New World	RP	9.34
	Ultima VII	Origin	RP	9.34
36	Chessmaster 3000	Software Toolworks	ST	9.32
37	High Command	Colorado Comp.	WG	9.29
38	Les Manly in: Lost in L.A.	Accolade	AD	9.28
39	Secret Weapons of the Luftwaffe	LucasArts	SI	9.27
	Jack Nicklaus Signature Golf	Accolade	SP	9.27
41	Wizardry VII: Crusaders of Savant	Sir-Tech	RP	9.25
42	Stunt Island	Disney	SI	9.23
43	Lemmings	Psygnosis	AC	9.21
44	Lost Files of Sherlock Holmes	Electonic Arts	AD	9.20
45	Second Front	SSI	WG	9.17
46	Eric the Unready	Legend	AD	9.16
47	Tetris Classic	Spectrum HoloByte	AC	9.14
48	Hong Kong Mahjong Pro	Electonic Arts	ST	9.13
49	The Castle of Dr. Brain	Sierra	AD	9.11
50	Eye of the Beholder	SSI	RP	9.10

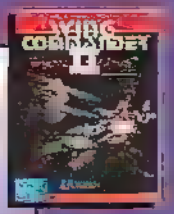
The Computer Gaming World Poll

Monthly Views of the Readers of Computer Gaming World Magazine

Top Wargames

	GAME	COMPANY	SCORE
1	Conquered Kingdoms	QQP	10.25
2	V for Victory: Velikiye Luki	Three-Sixty	9.93
3	Empire Deluxe	New World	9.87
4	The Perfect General	QQP	9.75
5	V for Victory: Utah Beach	Three-Sixty Pacific	9.63
6	Pacific War	SSI	9.51
7	Warlords	SSG	9.44
8	High Command	Colorado Comp	9.29
9	Second Front	SSI	9.17
10	Conflict: Korea	SSI	9.09

Top Action Games



	GAME	COMPANY	SCORE
1	Wing Commander II	Origin	10.23
2	Wolfenstein 3-D	Id Software	9.70
3	Lemmings	Psygnosis	9.21
4	Tetris Classic	Spectrum HoloByte	9.14
5	Oh, No! More Lemmings	Psygnosis	8.92
6	Out of this World	Interplay	8.57
7	Terminator 2029	Bethesda	8.28
8	Conan the Cimmerian	Virgin	8.10
9	Speedball 2	Konami	7.92
10	Ancient Art of War in the Skies	MicroProse	7.44

Top Sports Games

	GAME	COMPANY	SCORE
1	Links 386 Pro	Access	10.51
2	Front Page Sports Football	Dynamix	10.21
3	Links	Access	9.47
4	Hardball II	Accolade	9.37
5	Jack Nicklaus Signature Golf	Accolade	9.27
6	Tony LaRussa's Ultimate Baseball II	SSI	8.72
7	NFL Pro League Football	Micro Sports	8.54
8	The Games: Winter Challenge	Accolade	8.50
9	PGA Tour Golf	Electronic Arts	8.49
10	Tony LaRussa's Ultimate Baseball	SSI	8.49

Poll is based on reader survey cards in each issue of *CGW* and published two issues subsequent. Data on more than 100 games is archived and top ten lists may contain games which scored below the Top 100 cutoff.

51	The Dagger of Amon Ra	Sierra	AD	9.09
	Conflict: Korea	SSI	WG	9.09
53	Chuck Yeager's Air Combat	Electronic Arts	SI	9.06
54	Bane of the Cosmic Forge	Sir-Tech	RP	9.05
	Quest for Glory I (VGA)	Sierra	AD,RP	9.05
	The Lost Admiral	QQP	ST	9.05
57	Red Storm Rising	MicroProse	SI	9.04
	Conquests of the Longbow	Sierra	AD	9.04
59	Silent Service II	MicroProse	SI	9.03
60	Quest for Glory II	Sierra	AD,RP	9.02
	Gunship 2000	Microprose	SI	9.02
62	Carriers At War	SSG	WG	9.01
	Police Quest 3	Sierra	AD	9.01
64	Ultima V	Origin	RP	9.00
	Battles of Destiny	QQP	WG,ST	9.00
66	Space Quest IV	Sierra	AD	8.98
	Western Front	SSI	WG	8.98
68	F-15 Strike Eagle III	MicroProse	SI	8.97
	Great Naval Battles	SSI	WG,ST	8.97
70	The Adventures of Willy Beamish	Dynamix	AD	8.96
71	Mech Warrior	Activision	ST SI	8.94
72	F-117A	MicroProse	SI	8.92
	Oh, No! More Lemmings	Psygnosis	AC	8.92
74	The Island of Dr. Brain	Sierra	ST	8.91
75	Rise of the Dragon	Dynamix	AD	8.89
	Martian Memorandum	Access	AD	8.89
77	Indianapolis 500	Electronic Arts	SI	8.83
78	Elvira	Accolade	RP	8.82
79	Command HQ	MicroPlay	WG,ST	8.81
	Spellcasting 301: Spring Break	Legend	AD	8.81
81	Rex Nebular	MicroProse	AD	8.80
82	Gateway to the Savage Frontier	SSI	RP	8.79
83	Populous II	Electronic Arts	ST	8.78
	Hoyle Book of Games, Vol. 3	Sierra	ST	8.78
85	Siege	Mindcraft	ST	8.77
86	Heart of China	Dynamix	AD	8.75
87	Battlechess	Interplay	ST	8.72
	Tony LaRussa's Ultimate Baseball II	SSI	SP	8.72
	Gateway	Legend	AD	8.72
90	Starflight II	Electronic Arts	RP	8.71
91	Battles of Napoleon	SSI	WG	8.70
92	F-15 Strike Eagle II	MicroProse	SI	8.69
93	Pools of Darkness	SSI	RP	8.68
94	Typhoon of Steel	SSI	WG	8.67
95	Armada 2525	Interstel	ST	8.63
96	Amazon	Access	AD	8.62
97	Space Quest V: Mutation	Sierra	AD	8.60
98	Buck Rogers	SSI	RP	8.57
	Carrier Strike	SSI	WG	8.57
	Out of this World	Interplay	AC	8.57

Games on unnumbered lines have scores equal to the line above. = Top game of type.
AD=Adventure, RP=Role Playing, SI=Simulation, ST=Strategy, WG=Wargame, AC=Action, SP=Sports

PC Research Hits List of Top-Selling Software

March, 1993

PC Games (MS-DOS)

Rank	Title and Source
1.	X-Wing (LucasArts)
2.	Alone in the Dark (Interplay)
3.	Empire Deluxe (Broderbund)
4.	Space Quest V (Sierra On-Line)
5.	Ultrabots (Novalogic)
6.	Wolfenstein 3-D/Spear of Destiny (Formgen)
7.	Tony Larussa Baseball II (Strategic Simulations)
8.	Comanche: Maximum Overkill (Novalogic)
9.	Ultima VII (Origin)
10.	Hardball III (Accolade)
11.	Links 386 - Pro (Access)
12.	Sim City (Maxis)
13.	Police Quest (Sierra On-Line)
14.	Links - Pinehurst (Access)
15.	Wing Commander (Origin)
16.	Links - Mauna Kea (Access)
17.	Microsoft Flight Simulator (Microsoft)
18.	Civilization (MicroProse)
19.	Leisure Suit Larry V (Sierra On-Line)
20.	Ultima Underworld II (Origin)

Amiga Game

Rank	Title and Source
1.	688 Attack Sub (Electronic Arts)
2.	Medieval Warriors (Merit)
3.	Operation Combat (Merit)
4.	AD&D Gateway to Savage Frontier (Strategic Simulations)
5.	Legend of Kyrandia (Virgin)

Macintosh Games

Rank	Title and Source
1.	Prince of Persia (Broderbund)
2.	Award Winners: KQV & Red Baron (Sierra On-Line)
3.	Civilization (MicroProse)
4.	Microsoft Flight Simulator (Microsoft)
5.	Lemmings (Psygnosis)

CD-ROM Product

Rank	Title and Source
1.	Compton's Encyclopedia Upgrade (Compton's New Media)
2.	MPC Wizard (Aris Entertainment)
3.	Street Atlas U.S.A. (Delorme)
4.	Cinemania (Microsoft)
5.	Battle Chess (Interplay)
6.	Mantis (MicroProse)
7.	World View (Aris Entertainment)
8.	Secret Weapons of the Luftwaffe (LucasArts)
9.	Key Clipmaster Pro (SoftKey)
10.	Grolier's Illustrated Encyclopedia (Software Toolworks)

This list is based on units sold by Software Etc., Babbages, Waldensoftware and Electronics Boutique. For more information, please contact PC Research at (703) 435-1025

What You've Been Playing Lately

Every month our mailbox bulges with hundreds of Reader Input Cards from our most loyal and outspoken readers. Over the years we've found these cards to be an invaluable source of feedback. Within 10 days of releasing our latest issue we can expect to see cards pouring in with suggestions, encouragements, tirades and many good laughs, in addition to the data for our Top 100 poll. Through your efforts, we know *exactly* where we stand with our readers (you don't mince words!), and we are treated to well-articulated opinions on anything and everything related to gaming. This column is a forum for these responses and for the results of our "Playing Lately?" query on the Reader Input Card. Thanks for taking the time to fill them out ... keep 'em coming!

1.	X-Wing (LucasArts)
2.	Civilization (MicroProse)
3	Empire Deluxe (New World)
4.	Gary Grigsby's Pacific War (SSI)
5	Ultima VII+ (Origin)
6.	Front Page Sports Football (Dynamix)
7.	Conquered Kingdoms (QQP)
8.	Ultima Underworld II (Origin)
9.	World Circuit (MicroProse)
10.	Star Control 2 (Accolade)

In issue 106 the prying minds at *CGW* asked you about computer gaming's effect on your relationships with other humanoids. The overwhelming response indicates that there are a lot of neglected Significant Others out there! Where families of gamers were concerned, the classic "Battle for the TV Remote" has been moved to the computer room, where the power struggle continues. On the positive side, many of you have made cyber-friendships on networks and have made gaming a part of family Quality Time. Here are some samples:

"On any given evening, there are 4 chairs in front of my computer! One person playing X-wing, one controlling the keyboard (the "on deck" circle) and two people waiting. Not much progress is made -- either productive or in the game!"

- E. Dahl, Northfield, MN

"What other people? Chips n'Bits and UPS love me. Who else do I need?"

- M. Alderfer, Sugar Land, TX

"Since *Civilization*, my wife no longer argues that our computer is simply a very expensive Nintendo machine. I can't get much computer time anymore - she became a Civ *fanatic*!

- L. Johnson, Baton Rouge, LA

"Makes my eyes red, takes all my money.
Keeps me outta bed, ticks off my honey.

- M. Brosnan, Upland, CA

"I stay up late too often playing games. It often irritates my wife when I don't come to bed on time. However, our three cats like it, because they get a midnight feeding that they wouldn't ordinarily get."
(That's just you on the bus, but look to your left -- the bleary eyed guy passing on the way to work might be me.)"

- M. Rogers, Huber Heights, OH

"My friends all have computers. My wife, however, is considering putting a contract on Sid Meier."

- Unnamed Gamer, St. Paul, MN

"Careful management of one's time is essential. Negotiate for more gaming time. Change pants. Take out the garbage. Tolerate the relatives!

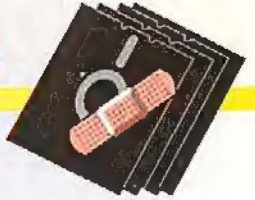
- K. Miller, Windsor, CT

"Significant Other??....oh yeah, she's the one I see in the reflection of my monitor all the time.

- E. Reed, Odenton, MD

"In our house the only strife caused by gaming is due to us having one computer. My wife and I have to schedule our time on-line to be fair. Also, we found a good housepainter through the Sierra Network. What a surprise that was!

- J. Sogue, New Fairfield, CT



The Patch File

Computer game programs have grown so massive and the number of possible configurations has become so huge that incompatibilities and glitches seem to be breeding at an exponential rate. Consumers and publishers are both frustrated at the need for adding patches into "buggy" programs, but they seem to be an interim solution that is going to be with the hobby for a while (presumably, until a standard platform configuration is agreed upon). So, until the golden age of standardized platforms and bug-free programs, *Computer Gaming World* will publish a regular list of the latest updates of which we are aware.

These patches can usually be downloaded from most major networks (e.g., **Compuserve** or **GEnie**), but can also be obtained from individual software publisher's own BBSs or direct from the publisher with proof of purchase. We continue to urge publishers to keep us updated on the latest versions/patches to their games.

('*' indicates new files.)

Aces of the Pacific 1946 Add-On Disk Update: Single Missions will now be saved correctly, and several fixes have been made to Career Pilots, including the elimination of known Shell System Errors. 3/10/93.

***Air Bucks Version 1.2:** A major overhaul of the original airline strategy game. 4/17/93

Ancient Art of War in the Skies Update: Version 02 of the game. 3/01/93

***Batman Returns Update:** Corrects problems with MS mouse lock-ups and lock-ups on Day 8. 1/24/93

Caesar with Stacker: Allows players to use Impressions' game with the *Stacker* utility. 3/05/93

Civilization Version 1.0.8 (Macintosh): Latest and greatest version of the reigning king of strategy. 2/23/93

Darkseed Version 1.5 Update: Latest version of CyberDreams' adventure. 1/20/93

Darklands Version 07 Update: Latest version of MicroProse's RPG. 3/05/93

***Dune II Patch File:** Fixes problems with the delivery of items from CHOAM. 4/18/93

F-15 Strike Eagle Help Info Text: Text file containing known problems and suggestions for those having problems with the sim. 1/08/93

F-117A Stealth Fighter V.04: Update to MicroProse's jet simulator. 1/29/93

Front Page Sports Football: A new version is available which improves upon the original release in many ways. 2/15/93

Great Naval Battles/North Atlantic Update: Updates all GNBNA files to version 1.2. 2/23/93

Gunship 2000 Islands and Ice Patch Version .085: Corrects keyboard lockout problems some gamers are having. 2/11/93

Hockey League Simulator 2 Update V1.11: New version for the IBM. 2/3/93

***IndyJones/Atlantis Mac Patch:** Corrects the "desert balloon" crash bug in the Mac version. 4/15/93

Island of Dr. Brain Update: Fixes "Ooops 10" error, music room puzzle, and several other problems. 12/23/92

Links 386 Pro Update Version 1.09: Includes new drivers for specific video cards, a new Sound Blaster Pro 16 driver, and fixes the Harbour Town Hole 14 lockup. 3/3/93

Magic Candle III Version 1.16: Fixes problems with Sound Blaster support, mirror of honesty/candlewick problems, difficulties with tranferred characters from MC2, and other minor glitches. 2/17/93

Mantis Update (IBM): Adds new features and improves gameplay. For disk-based version only. 3/01/93

NFL Pro League Football '92 V1.1: Contains many upgrades, fixes, and additional schedules. 1/26/93

***Pacific War V1.1 Upgrade:** The "official" SSI upgrade to Gary Grigsby's Pacific War. 4/18/93

Shadow President Update Version 1.0b: This version will run in ca. 30k less memory than the previous version. It also includes minor adjustments to the internal processing. 2/12/93

SimLife Upgrade V2: Fixes minor problems in Maxis' artificial-life simulator. 2/10/93

Solitaire's Journey Patch V1.03: This is a patch for those having problems with saved Tournament games and those having mouse troubles. 2/12/93

Space Quest 5 Patch: Corrects the following: (1) Inability to Restore or Quit after running out of time on WD-40's ship. (2) Inability to skip polishing the Star Con crest in EGA mode. (3) Loss of cursor when Roger steps off the log which spans the river on Kiz Urazgubi. 2/26/93

Star Legions Update: Fixes some machine-specific lock-ups, problems with phasers firing out of the FOV, changes to mission ratings, fixes to award sequence. 1/15/93

Sumpter to Appomattox Update: Fixes the "Build" routine and eliminates the memory error that some gamers were having. 3/13/93

Task Force 1942 Update: Corrects the waypoint problem, among others. 2/15/93

LaRussa's Ultimate Baseball V1.1: Upgrades SSI's baseball simulation to the latest version. 1/29/93

Tom Landry Football V. 1.03 Update (IBM & Mac): Corrects problems with high-speed modem play. 3/06/93

Twilight 2000 Colonel Upgrade (VGA only): Adds extra sounds and graphics, and adds a new ending to the game. 2/2/93

Ultima VII Version 3.4: Lord British fixes some minor leaks in the roof of Castle Britannia. Updates from Version 3.0 to 3.4. 2/17/93

Ultima Underworld I Patch: Replaces old patch to UWI. 2/25/93

Ultima Underworld II Patch: Fixes the "strike" problem, local bus difficulties, and a few others. 2/24/93

***Wilson Pro Staff Golf Update:** Corrects mouse driver problems and errors where incorrect driving clubs were selected for certain ranges. 4/21/93

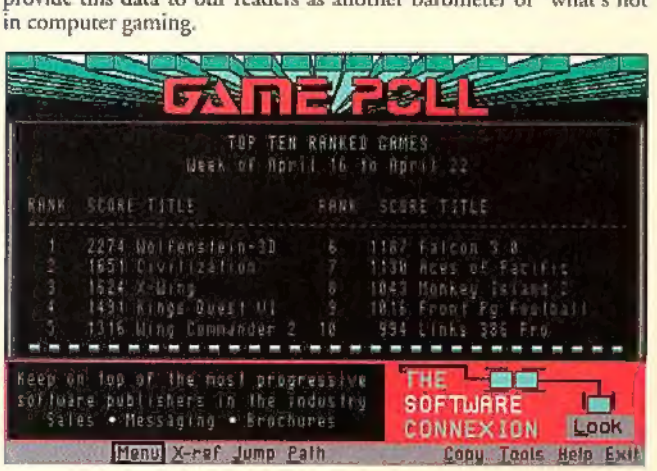
***World Circuit Modem Update V1.05:** Corrects problems with 2400 baud modems. 4/8/93

***X-wing I/O Soundcard Patch:** Allows I/O port settings of 210-260. 4/15/93

***X-wing Roland Sound Patch:** Fixes crash bugs associated with the Roland soundcard on 486 machines. 4/15/93

The PRODIGY Weekly Top Ten

Computer Gaming World is Prodigy's on-line games expert. Look for us in their Game Center, a forum where users read articles posted on-line by CGW and exchange messages on the bulletin boards (we can be reached there at EXPT 40B). The Prodigy Game Poll is run by Prodigy based on a list of games provided by CGW and is updated weekly. Note that it is not a cumulative rating over time (like the CGW Top 100 Poll). Instead, the Prodigy Game Poll is a weekly "Snapshot" of game popularity with gamers rating their favorites on a 1 - 10 scale. The highest total point earners make their Top 10. We provide this data to our readers as another barometer of "what's hot" in computer gaming.



The Boffo New Tinseltown

Entertainment Software Enters The Hollywood Era

Although the full convergence of the entertainment software and motion picture industries may not occur for at least another six to ten years, pre-production work seems to have already begun on the corporate side of the fence. James Cameron, master of special effects for *Terminator 2*, recently announced the formation of a new company to create a digital studio. The idea is to rely more on computers to handle the special effects burden. This announcement began to generate renewed speculation about building 3-D models of actors and sets for inexpensive post-production work (cameo shots for sequels where the actor/actress doesn't want to take the time to appear, but might let their image be used at a reduced price). It also initiated discussion about the possibilities of parallel production for computer/video game development, allowing re-use of properties and talent for interactive versions of films.

Cameron's announcement was greeted with such interest in the Hollywood community that it occasioned a rare public appearance by George Lucas, chairman of the parent company for special effects house **Industrial Light & Magic**, in which he announced a more solid relationship between ILM and **Silicon Graphics, Inc.** (makers of the *Reality Engine*²). Such a relationship signified that ILM did not intend to surrender their technological lead in the special effects arena.

At the same time, **Tele-Communications, Inc.**, one of the country's largest cable television providers, announced that they would be constructing a fiber-optic data network to provide entertainment and educational programming, as well as shopping, on demand. The new infrastructure would provide both a significantly wider bandwidth for both downloading and uploading data through the cable television provider. At the time of their national press conference, the company hinted that their new data network would impact gamers, but TCI was unwilling to specify who their partners would be. They only hinted that a 500 channel system would need programming and that game software companies were interested. They even specified that multi-player games would be possible.

The day after the press conference, a leak from Sega's corporate headquarters in Japan indicated that the video game company planned to create a Sega channel which would allow gamers to download Sega games to their cartridge consoles for the price of a specialty cable channel. Sega of America's Doug Glen later explained that the company would market a tele-cartridge which would serve as DRAM and would store a program (to be downloaded from the cable in about two minutes) for as long as the console was turned on. Whenever the console was turned off, however, the DRAM would be cleared and the gamer would have to download that game again or download another.

Almost in response to the Sega leak, **Viacom International** (one of the largest television syndicators in the country) announced its acquisition of ICOM. So, along with **Sony Electronic Publishing** (which just took a major stake in **Psygnosis**), **Paramount** (which not only has its own electronic games division, as well as working with **Spectrum HoloByte** and **Interplay Productions** on *StarTrek: The Next Generation* and *StarTrek* properties respectively), **Walt Disney Software** and **LucasArts Games**, most studios are starting to take an interest in interactive entertainment.

Though the Hollywood incursion means that interactive entertainment can potentially reach a lot more people and could feasibly turn some entertainment software geniuses into wealthy individuals, there are some potential downsides for both the dedicated computer gamer and the entertainment software developer. First, Hollywood is a mass market industry. This means that the new blood which will be coming into the entertainment software industry in order to supervise Hollywood's new financial stakes will be some of the players we have seen around Hollywood studios for years. They will be people who do not understand interactive entertainment and will try to reduce game development to the lowest common denominator of the so-called "HighConcept." Developers will have to be careful that their designs do not become a *reductio ad absurdem* (reduction to the absurd) based on demographic surveys and the desire to be all things to all people. We've seen that. It's called television.

Second, there will be a heavy emphasis on pyrotechnics. Just as many movies are made as special effects extravaganzas to draw in the matinee and drive-in crowd (an archaic form of theater which once appealed primarily to teenagers who usually watched only part of the movies), there will be a tendency to develop technologies in search of a game. Naturally, this happens to some extent at the present time, but we can well imagine production review and new product meetings in the future where the principals spout questions like, "What can we do in order to use our new morphing technology?" and "How do we prove we're using more colors in our game than they are in theirs?" Will story become a secondary element? It is all too probable. At least, it is probable in the short run.

Third, we can expect to enter a grand new era of cross-promotion and licensing deals. Hollywood has always known how to exploit properties and cross-collateralize in the most effective manner. Let's just hope that the games are not underfunded when the "new money" of the old Hollywood discovers how small the current entertainment software market really is. As a corollary, don't expect prices to come down, even though the new players are more experienced at spreading the risk.

Fourth, expect it to become harder for small development houses and independent designers to get their products into the distribution system. Why should a Hollywood that used to own its own distribution system (before the government broke them up) hesitate to tie up the software distribution for its new products, especially since they already have such a system in the recording industry? Expect this incursion to slow down electronic distribution of games via cable, *except* when the studio has a stake in the cable system, whether through ownership or royalty agreement.

Finally, expect the content standards of games to be liberalized considerably. Up until now, there have been relatively few games which have concentrated on mature subject matter. Computer games are still looked upon as being for children and adolescents. Hollywood will attempt to broaden the market and the new money will force the old developers to take more risks in subject matter. Such risks will necessitate a voluntary ratings system. Perhaps, with the motion picture studios participating in the software industry, the MPAA ratings system will be applied to computer games.

In short, Hollywood is bringing new money and potential new distribution to the entertainment software industry. Yet, those who care about the quality of computer games will have to be *more vigilant* and *more dedicated* than ever in order to keep computer games from becoming as numbingly uninvolving as that so-called "interactive movie" that has toured the country recently. Narrowcasting is the future, not broadcasting. Those who refuse to learn that lesson may discover that interactivity (i.e. personal choice and control) isn't quite as entertaining as they thought it might be. CGW

Coming Soon

GATEWAY II
HOMEWORLD

LEGEND™
ENTERTAINMENT COMPANY

Legend Entertainment Company
14200 Park Meadow Drive
Chantilly, VA 22021

Distributed by Accolade, Inc.
To order, visit your local retailer or call 1-800-245-7744
© 1993 Legend Entertainment Company
Gateway II: HOMEWORLD is a trademark of Legend Entertainment Company. ALL RIGHTS RESERVED.

Stack the odds in your favor — With a screen saver for high-powered PCs.

ORIGIN® FX™ SCREEN SAVER

You purchased a high-end system for its blazing speed, added power and stunning graphics. So why settle for a screen saver that doesn't take full advantage of its capabilities?

ORIGIN FX is the next-generation screen saver, with 256-color, high-res graphics* running under Windows™. It's just what you'd expect from ORIGIN, the entertainment company that brings you the award-winning *Wing Commander* and *Ultima* series.

But whether you're a game player or not, you'll enjoy amazing animations, sensational sound**, and innovative images. *ORIGIN FX* is a great way to showcase your system, amuse yourself during breaks and discover what "state-of-the-art" means in a screen saver.

Special Bonus:
For owners of *Wing Commander II*, *ORIGIN FX* includes a module that plays all of WC II's cinematic sequences when the game is installed on your hard drive. And that's just the beginning – look for add-on *ORIGIN FX* modules shipped with our future games, to showcase their cinematics, as well.

Available at a software retailer near you or call **1-800-245-4525** for MC/Visa/Discover orders.

Actual screens may vary.

ORIGIN®
We create worlds.®
An Electronic Arts® Company
P.O. BOX 161750 AUSTIN, TX 78716

©1992 ORIGIN Systems, Inc. FX is a trademark of ORIGIN Systems, Inc. ORIGIN, Ultima, We create worlds and Wing Commander are registered trademarks of ORIGIN Systems, Inc. Electronic Arts is a registered trademark of Electronic Arts. Windows is a trademark of Microsoft Corp. * Requires that Windows be configured in 256-color mode with SVGA graphics. ** Ad Lib, Sound Blaster or Roland MT-32/LAPC-1 or 100% compatible required for music.